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New Railways in Africa

A NEW survey is in progress to determine the economic potentialities of each of the proposed rail links between Northern Rhodesia and East Africa, which have been referred to from time to time in our columns. The Economic Co-operation Administration and the Colonial Office are responsible for the work, which is being undertaken by Sir Alexander Gibb & Partners, London, and Overseas Consultants, Inc., New York; these firms carried out the surveys for the preliminary locations, which have been followed by more detailed examination of the recommended routes by engineers of the East African Railways. The survey party, whose report is expected to be submitted in the summer of 1952, includes a project manager, an economist, and a field engineer from the London firm; and an agronomist and a soil specialist from the U.S.A. Details were announced on Tuesday of a new Marshall Plan grant of £2,750,000 for British Colonial development. Of this sum, £500,000 is being allocated to the construction of a long-mooted link between the Central Province and Kumasi-Accra lines of the Gold Coast Railway. The line will be about 50 miles long, from Achiasi, the third station before Kade, terminus of the Central Province line, eastwards to Nsawam, north of Accra, and the location survey is being undertaken by Messrs. Rendel, Palmer & Tritton. It will shorten by some 165 miles the present long route from Accra, the capital, *via* Kumasi, to Takoradi, the port of the colony. The ruling gradient will be 1 in 100, and the sharpest curve 10 ch. radius. The new line will ease the strain on the Takoradi - Kumasi line north of Huni Valley, where the Central Province branch takes off, and also on the Accra - Kumasi line north of Kotoku. The doubling of the Takoradi - Tarkwa section of the Takoradi - Kumasi main line is already in hand, as also are large-scale improvements at Takoradi Harbour.

British and American Railways

IN our last week's issue we referred to the recent visit to America of Mr. John Elliot, Chairman of the Railway Executive, and to some comments he had made on organisation when he returned. Mr. Elliot found that, in the United States, there was a direct line of responsibility and communication between the functional Vice-Presidents of the major American lines and the regional functional officers. In this respect the organisation is similar to that which now obtains on British Railways. The principal difference would appear to be in the existence of a board of directors as a policy-making body, composed of men of wide outside interests and also the relative status of the General Manager as compared with the Chief Regional Officer in this country. In America, the General Manager is very much more the equivalent of the similar officer on the railways of this country before nationalisation, and his remuneration recognises the position he holds in the general railway organisation. It seems probable, too, that the functional Vice-Presidents, in carrying out their activities, are implementing policy decided by the board even if on the advice of the General Managers or one or more of the functional Vice-Presidents, rather than a policy evolved among themselves, as must often happen in the case of the British Railways Executive.

The Labour Problem in Industry

ELSEWHERE in this issue we deal with the difficulties the railways are experiencing as a result of the acute shortage which has arisen in footplate staff. The problem is by no means confined to those grades or, indeed, to the railways. It is estimated that at present there is a shortage of over 5,000 men in the permanent way grades—one of the chief reasons for the continued existence of speed restrictions. In general industry the position is also serious, due principally to the raising of the school-leaving age and the fall in the birth-rate about the year 1933. Last year only 630,000 persons reached the age of 15 compared with 740,000 in 1939, and in the case of those reaching their eighteenth birthday, the decrease was nearly 100,000. In the railway industry it is particularly difficult in many grades to operate any form of productivity bonus or other incentive to higher output or increased efficiency. It is possible, however, that some form of "merit rating" such as is finding favour in the United States might be helpful. Under this system improved rates of pay are given to men whose efficiency in a particular job is above the average.

Railway Inquiry Suggested Again

THE curtailment of the summer timetable period and the disclosure of the congestion of goods traffic on British Railways has resulted in the suggestion being made once again that an inquiry should be held into the administration of British Railways. A number of Conservative members of Parliament tabled a motion to this effect last week and there has been support for the general idea in several newspapers. In practice, it would be difficult to hold such an inquiry. The railways are a part of the general business of the British Transport Commission, and any inquiry would have to deal not with British Railways alone, but with the whole State transport organisation of the country. Even

if an attempt were made to confine the proposed investigation to railway affairs it would very soon become evident to any responsible body of investigators that no progress could be made on so limited a remit. It is sometimes overlooked that the organisation of the Railway Executive itself is under review at the present time and it might be better to await the outcome of this internal effort before deciding on any wider action.

Argentine Railways to be Self-Supporting?

DURING a four-hour speech to the Argentine Congress at the inauguration of the present session President Perón made several references to railway transport, especially with regard to future policy. Within a few years, he declared, recourse to foreign suppliers of railway rolling stock and equipment would be a thing of the past. A subsidiary industry was already beginning to take shape within Argentina, and it was hoped that the rate of its progress would be sustained and accelerated. Speaking about the existing system of rates and charges, he said that it was shortly to be changed for a new and simplified system which would be based on the supposition that the railways had a self-contained financial and economic structure. The new rates would be more like those applied by the Post Office, and would bear a closer relation to tonnage than to total distance conveyed. He stated that the number of locomotives in service had been increased from 3,500 to 3,900 since 1946, that freight ton-km. amounted to 16,800 million in 1950, and that the average monthly wage of railwaymen had risen from 252 pesos in 1946 to 841 pesos in 1950. The deficit on the operation of the railways as at December 31, 1950, he gave as 543,000,000 pesos.

Permanent Way Institution Convention

THOSE who attended the annual summer convention of the Permanent Way Institution at The Hague under the Presidency of Lt.-Colonel H. B. Everard were agreed that the detailed planning of the visit inspired by Mr. F. Q. den Hollander resulted in the 1951 meeting being the best organised and most popular of the series. There was also a record attendance of some 380 members and 180 ladies. Ample opportunity was afforded for inspecting a number of railway and civil engineering works in Holland and members were greatly impressed by the extent of restoration work carried out by the Netherlands Railways in the past six years. Heavy damage to the electrified sections was speedily repaired and many important bridges and stations have been rebuilt. Among the visits arranged was one to inspect the strengthening of the track bed on The Hague-Utrecht main line, which was constructed in 1855 on a soft subsoil, while another was to inspect the new station at Hengelo which suffered severe bomb damage. Hengelo Station, which will be completed in a few months, includes a hall at street level and subways leading to high-level platforms, with a store for 1,000 bicycles in a cellar under the hall. A report of the meeting is given elsewhere in this issue.

Service Charges on Trains

THE principle of supplementary charges on certain long-distance trains is one of long standing. In this country it applies to all-Pullman trains, varying with distance; before the war, such charges were levied on the users of L.N.E.R. and L.M.S.R. streamline trains, and, because of the special service offered, occasioned no adverse comment from passengers. In the United States the tendency during the past 15-20 years has been to abolish service charges, and a notable case has been that of the "Broadway Limited" of the Pennsylvania, but in other directions there is now a tendency for service charges to come into operation again. Passengers between Chicago and Los Angeles or San Francisco by the principal streamline trains—"Super-Chief," "City of Los Angeles," and "City of San Francisco"—are all required to pay an additional $15 if making the through journey. The all-coach (equivalent of third class) "El Capitan" between Chicago and Los Angeles commands a supplement of $5. The Southern Pacific has now decided to impose a supplement on coach passengers on six of its Californian services—the "Daylight," "San Joaquin Daylight," "Sacramento Daylight," "Shasta Daylight," "Starlight" and "Cascade," though at $1 a head for through journeys, and smaller sums for shorter distances, this is little more than a seat reservation charge.

Festival of Britain Pullman Train

A NEW "Golden Arrow" Pullman car train will be placed in service on June 11, on the London-Dover route. The train consists of ten cars, comprising three first class parlour cars, one first class parlour and bar car, three first class kitchen cars, one first class brake, one second class parlour car, and one second class brake. Accommodation is provided for 184 first class passengers and 78 second class passengers. The construction of seven new Pullman cars was first mooted in 1938, when an order was placed on the Birmingham Railway Carriage & Wagon Co. Ltd., and a large amount of preparatory design work carried out. Owing to the outbreak of war, construction of the cars was not proceeded with. The new rolling stock, which is described and illustrated elsewhere in this issue, is of timber construction suitably reinforced by mild-steel pressings. The cars are built with straight sides; the mild-steel body panels and pressings are metal sprayed to resist corrosion. Special attention has been paid to interior decoration and to the provision of passengers' amenities.

York Resignalled

BEFORE the war the L.N.E.R. began an ambitious resignalling scheme to concentrate the work of many manually-worked signalboxes in and around York into one centralised all-electric installation. The work, suspended because of the war but resumed in 1946, has now been completed. The resignalling covers in all 33¼ miles of track and the platforms in York Station. Nearly 18 miles of running lines and 5½ miles of loop, reception, and platform lines are now brought under the control of one signalbox in York Station, displacing eight mechanically-operated boxes, with a total of 867 levers. A signalman in the new box, out of sight of the trains, can turn a switch on the control panel and set up the route of a train for anything up to 1,500 yd. Chaloners Whin Junction, where the London line joins the lines from Leeds and Sheffield, is now electrically operated by 12 route switches; before the resignalling there was at that point an 80-level manual signalbox.

Largest Route Relay Interlocking System

THE York installation, the largest route relay interlocking system in the world, has cost more than £500,000, but £19,680 will be saved in a year in wages alone, as only 27 signalmen are needed, compared with 70 in the old boxes. The scheme links up on the north side with existing colour-light signalling extending some 44 miles to Darlington, over what is at present the longest continuous section thus equipped in the country. The control panel, the largest of its type, deals with 827 separate routes; it contains 5,416 miniature light bulbs for route indication and track occupation. The opening of the present through station at York in 1877, replacing the original terminus within the walls, was a notable improvement, enabling traffic to be speeded up and more easily handled. The new installation is a further time saver; minutes formerly spent in passing signals between boxes and moving levers are gained, and the fewer signals and the use of colour-lights have increased the average speed of trains, particularly goods, over a complicated section. The project is a tribute to the Westinghouse Brake & Signal Co. Ltd., the chief signalling contractors, and Standard Telephones & Cables, Limited, which designed and installed the train describers, and to the signal and telegraph officers of the L.N.E.R. and the North Eastern Region who prepared the scheme and under whose responsibility it has been brought to completion.

Summer Timetable Curtailment

WHEN British Railways announced the summer services for this year June 18 was given as the date on which they would come into force. This was already later than the customary date for the operation of summer services, and Mr. John Elliot, Chairman of the Railway Executive, gave a specific warning that, if the movement of freight traffic made it necessary, mid-week trains might have to be cancelled to provide goods services. For a good many months the freight position of British Railways has been causing acute concern. Shortage of train crews and sickness during the winter had augmented an accumulation of freight which had occurred partly because of increased production and partly because of changes in the trend of traffic movements arising from variations in normal traffic routes. One example of this has been the import of American coal into South Wales, which has helped to increase the mineral traffic from that area by some 47 per cent.

Congestion at many places has become acute, and there has been no indication that normal means will result in a clearance within a reasonable time. Embargoes on goods acceptance have been imposed on many stations, but last week the Railway Executive decided that, in an endeavour to clear outstanding freight traffic before the summer, it would be necessary to shorten the duration of the 1951 summer passenger services. The summer timetables are to come into effect on July 2 instead of June 18 and end on September 9 instead of September 23, a total curtailment of four weeks.

This announcement has been the subject of criticism in the daily press. A good deal of capital has been made of the changes, some of it political but much of it arising from a natural disappointment that widely-publicised passenger improvements are to be deferred. The timing of the announcement may well have been unfortunate. Probably it would have been better to have endeavoured, even if only over a period of a few days, to bring before the public the difficulties facing the railways before announcing the timetable curtailments. As it is, the first reaction of many members of the public has been resentment that bookings made on trains included the summer timetable will have to be adjusted, or plans made for travel by these trains revised. The Railway Executive statement said that every endeavour would be made to transfer the reservations already made to other services, where necessary, but this, of course, is not wholly satisfactory to the passenger nor does it make clear what the position will be in the case of trains already fully booked. It is understood that where necessary relief trains will still be run, and this must tend to reduce the economy in manpower resulting from the curtailments.

Clearly, British Railways were in a quandary over the steps which should have been taken to deal with this problem. The crying need for the maximum revenue to be derived from passenger services through the summer months must have been a powerful factor in restraining any inclination to "play down" passenger travel which the freight position must have brought into consideration. The crux of the problem is to be found in the acute labour situation which has arisen on the railways. Only if this is energetically tackled can there be any hope of permanent easement in the present position.

The greatest need of British Railways is for engine crews and other operating grades. The cuts in the summer timetables are estimated to release for freight train working some 600 sets of men a day, and this should be a considerable contribution to easing the position, although it will be a long way short of solving it. Some indication of the shortage which exists may be gained from the fact that there are 1,631 vacancies for footplate staff on the Western Region alone, and recently it was estimated that about 250 freight trains each night over the whole of British Railways could not be run through lack of staff.

The position cannot be remedied solely by action on the part of the railways. There is a clear need for assistance to be given by the Minister of Transport and by the Government. It is worth considering whether the position of British Railways has not reached a stage at which operating grades, for example, should not be reserved from military call-up, as was the case during the war. During this summer the railways will lose to the Forces some 7,000 men in these grades. As an offset, they are due to receive back about 5,000 men who have completed their service, but there is no guarantee that the whole of this number will return, for competition for labour is now so acute, and the attractions of alternative employment so considerable, that there is a constant drift of men away from the railway service. If this tendency is permitted to continue, the effect on the efficiency of British Railways may be disastrous. In any event, on the present basis of staffing and traffic expectations, the outlook for next winter must be ominous.

British Transport Commission Traffic Receipts

THE rate increases of 16⅔ per cent. for May 15, 1950, and of a further 10 per cent. from April 16 last make difficult any comparison between last year and this as regards the advance figures of British Railways receipts for the fifth statistical period of the year, to May 20; the situation is further complicated by the incidence of the Whitsun holiday. From the better indication given by aggregate figures for the first 20 weeks of 1951 it is clear that only coal traffic, with a rise of 22 per cent. in receipts over this period, shows any increase over last year. Coal traffic receipts, moreover, for Period 5 (£7,104,000) are only slightly above those for Period 4 (£6,908,000), and the same is true of merchandise (£7,704,000 against £7,389,000), minerals (£2,774,000 against £2,653,000), and parcels (£2,592,000 against £2,456,000); both these periods included bank holidays. If, however, the increase in the last few weeks in the volume of freight traffic may seem from these figures to be small, it is largely changes in the flow and perhaps also in the length of haul which are causing the railways' present difficulties.

The increase of 12 per cent. in British Railways passenger receipts for this period over Period 4 is due to Easter holiday bookings being made largely in Period 3. For the aggregate of 20 weeks passenger receipts are 2·7 per cent. down on last year; in view of the incidence of bank holidays, the increase of 9 per cent. over 1950 in receipts for Period 5 has small significance.

	Four weeks to May 20		Incr. or decr.	Aggregate for 20 weeks		Incr. or decr.
	1951	1950		1951	1950	
	£000	£000		£000	£000	
British Railways—						
Passengers	8,093	7,428	+ 665	33,850	34,787	− 937
Parcels, etc., by passenger train	2,592	2,274	+ 318	12,160	10,826	+ 1,334
Merchandise & livestock	7,704	6,587	+ 1,117	36,525	31,887	+ 4,638
Minerals	2,774	2,459	+ 315	13,296	11,827	+ 1,469
Coal & coke	7,104	5,789	+ 1,315	34,024	27,785	+ 6,239
	28,267	24,537	+ 3,730	129,855	117,112	+ 12,743
Road Passenger Transport: Provincial & Scottish—						
Buses, coaches & trolleybuses	3,238	2,752	+ 486	14,333	12,830	+ 1,503
London Transport—						
Railways	1,265	1,122	+ 143	6,088	5,553	+ 535
Buses & coaches ...	2,661	2,432	+ 229	12,178	11,623	+ 555
Trolleybuses & trams ...	773	839	− 66	3,744	4,081	− 337
	4,699	4,393	+ 306	22,010	21,257	+ 753
Inland Waterways—						
Tolls	69	60	+ 9	317	266	+ 51
Freight charges, etc. ...	68	67	+ 1	320	319	+ 1
	137	127	+ 10	637	585	+ 52
Total	36,341	31,809	+ 4,532	166,835	151,784	+ 15,051

In the case of London Transport, comparison with last year is vitiated by the operation from October last of the London Charges Scheme. The decline in tram and trolley-

bus receipts presumably is due to abandonment of tram routes in South London.

The increase in inland waterways receipts for Period 5 of only 7·7 per cent. over 1950 shows that, allowing for the rate increases, the increase in traffic during Period 4 was not maintained. Inland waterways traffic generally does not seem at any time in recent months to have increased in proportion to industrial production.

PERCENTAGE VARIATION 1951 COMPARED WITH 1950

	4 weeks to May 20	20 weeks to May 20
British Railways—		
Passengers	+ 8·9	+ 2·7
Parcels	+ 13·9	+ 12·3
Merchandise & livestock	+ 16·9	+ 14·5
Minerals	+ 12·8	+ 12·4
Coal & coke	+ 22·7	+ 22·4
Total	+ 15·2	+ 10·8
Road Passenger Transport	+ 17·6	+ 11·7
London Transport—		
Railways	+ 12·7	+ 9·6
Buses & coaches	+ 9·4	+ 4·7
Trolleybuses & trams	+ 7·8	+ 8·2
Total	+ 6·9	+ 3·5
Inland Waterways	+ 7·7	+ 8·8
Aggregate	+ 14·2	+ 9·9

Problems of Nationalised Transport

PRIDE in the achievements of the British Transport Commission and its Executives since nationalisation and an almost defiant optimism as to the future of nationalised transport, with however a warning of rising costs and misgivings regarding the adequacy of the employees' contribution to joint consultation, were expressed last week by Lord Hurcomb, Chairman of the B.T.C., in his address to the Transport Salaried Staffs' Association: the substance of the address is given elsewhere in this issue. As to achievements since 1948, and the "efficiency" which critics are constantly urging on the railways, Lord Hurcomb chose as an illustration the admittedly useful index of net ton-miles per total engine-hour. In this however he answered critics more in the letter than in the spirit. Those who exhort the railways to achieve greater "efficiency" speak mostly as railway users and taxpayers rather than as transport statisticians. Apart from the conclusiveness of the statistic quoted, on which many people disagree, it would have been better surely to give, even to an audience of railway clerks, proofs of efficiency in the form of good service to railway users combined with staff and other economies. In view moreover of the present crisis in handling the traffic offering, Lord Hurcomb's figures are bound to be received, at least by hostile critics, with scepticism.

No doubt as to the Commission's intentions as to its charges is left by Lord Hurcomb's remarks on policy. Transport services are to be provided "at prices which, although subject to adjustment . . . will continue to compare favourably with the cost of other things." This means that with rising costs, rates and fares will be increased from time to time. His insistence on the smallness of the accumulated B.T.C. deficit—less than 3 per cent. of the gross turnover in the first three years of nationalisation—does not lessen the need for its elimination. He somewhat cautiously deprecates a transport subsidy on the ground that this would remove the stimulus to efficiency of the necessity for the concern to pay its way. He seems, however, to imply that such a subsidy is a possibility.

The proper use of joint consultative machinery by employees is stressed by Lord Hurcomb, with some strong hints as to past failings and remedies for these. Consultation, he points out, should not be used as a method of bargaining with an eye to ulterior ends, and the trades unions should play their part in ensuring that necessary changes are faced, and proposals generally examined on their merits by staff representatives. How far Lord Hurcomb was considering the union he was addressing, the T.S.S.A., which has perhaps a better record in these matters than the other two railway unions, is not known, but he was right in drawing attention to the disappointing record of some staff representatives in joint consultation. Even so, the shortcomings displayed in the brief period (of just over one year) in which consultative machinery has been available are largely due to the difficulties of adaptation to new ideas; some employees have found it hard to change their attitude from one of fierce, if devoted, partisanship to one of co-operation in a common cause. It is probable that the new procedure on the whole has worked as well as its more realistic creators dared to hope; much however remains to be done, and not least by the unions in educating their members in the new responsibilities imposed on them.

Joint Engineering Conference

BRITISH railways have played a vital part in the industrial and economic development of the country, and it is fitting that they should be well represented at the joint engineering conference which the three major engineering institutions staged as their contribution to the Festival of Britain. The conference was opened in London at the Institution of Civil Engineers on Monday, and its main object is to show what British engineers and scientists have achieved during the past hundred years, and at the same time to stimulate discussion on present-day problems and possible developments. Mr. Richard Stokes, Lord Privy Seal, welcomed the delegates at the opening meeting, when the chair was taken by Mr. W. H. Glanville, President of the Institution of Civil Engineers.

All the contributions on railway subjects referred to in our May 18 issue have been presented this week. Mr. R. A. Riddles devoted the first part of his paper on railway mechanical engineering to a historical survey with special reference to the ebb and flow in the development of rolling stock, pointing out that the main problems of today were concerned as always with reduced costs and improved service, although, to those must now be added saving of materials. While nationalisation had brought no sudden change, either to the problems themselves or to the methods of solving them, it had opened wide accumulated stores of experience gathered by the former companies. Elimination of older, less economical locomotive types, made possible by stationary test plants, offered a large cumulative reduction in coal consumption. Similarly the relating of train schedules to the most economic rate of output of the different engines gave promise of further savings. But the most profitable lines of development, still offering substantial reduction in costs when fully implemented, were those of simplification of design, better materials, and improved repair performance of the locomotive in shops and sheds. The new standard locomotives, remarked Mr. Riddles, were only a stage in this process, and whatever inroads other forms of motive power eventually achieve, there would be "real money" in ensuring that the remaining steam stock was just as mechanically and operationally efficient as it could be made.

A joint paper by Messrs. C. M. Cock, H. H. Dyer, and R. Dell, covering electric traction and signalling, described the single-phase, three-phase, and d.c. systems, together with the decisions on these systems reached in many countries. Speculation on future possibilities must depend largely on economic conditions. The elimination of brake blocks operating against tyres would lead to longer life and much saving of costly tyre steel if this could be secured without disproportionate capital expenditure. The use of lighter locomotives and coaches and of lightweight high-speed traction motors, and the reduction of starting resistance losses by giving traction motors the widest possible range of field control, would lead to economies in energy consumption and reduce the wear and tear on vehicles and track. The second part of this paper recounts the development of the application of electricity to railway signalling from the time of the experiments of Oersted, Ampère, and Faraday in 1819 and 1820, which laid the foundation of the electric telegraph, to the complex signalling installations of today. Subsequent developments

traced dealt with the interlocking between the block telegraph and the running signals, the track circuit, colour-light signals, power signalling, and relay interlocking.

Lt.-Colonel H. B. Everard referred to possible developments in Great Britain now that the decision has been made to adopt flat-bottom rails as standard. Since limitations of the rolling-stock gauge would, unless some radically new form of motive power be adopted, prevent any great increase in axle loads, there was little chance that the weight of rails per yard would increase materially, and particularly since more care was now being taken to reduce the adverse effects on the track of locomotives moving at high speeds. It was possible that more attention would have to be given to the composition or treatment of rail steel. Moreover, remarked Colonel Everard, despite the desirability of reducing the number of joints, it did not appear likely that the welding of rails into very long lengths would be adopted as standard, owing to the difficulty of re-laying long welded lengths by prefabricated methods; the difficulty of replacing faulty rail length; and economic considerations which would appear to limit the lengths into which rails would be welded to something of the order of 180 ft. The greater stiffness of flat-bottom rails might give rise to rail-end batter.

Another paper presented to the conference this week was by Mr. J. I. Campbell on the subject of railway bridges. Mr. Campbell said that the use of pre-stressed concrete in the construction of bridges by British Railways had not been influenced by the fact that it was a new material or that bridge engineering might be passing through a pre-stressed concrete fashion phase. From the experience of the maintenance costs for existing reinforced-concrete structures which were built under proper concrete construction control, it had been established that the maintenance costs for pre-stressed concrete were much less than for steel. The type of deck for through bridges which the Railway Executive was developing must have a reasonable damping effect on the bridge, easy erection, minimum of interference to traffic during erection, economy in first cost and maintenance, and long life. Two bridges had been designed and it was hoped they would be built by the middle of 1951.

Mr. David Anderson, referring in his paper to underground construction and planning, pointed out that no underground railways in the heart of London had been driven since 1907. The Railway (London Plan) Committee and the British Transport Commission London Plan Working Party had made detailed studies, however, and 103 route-miles at a total cost of £340 million had been envisaged. The author suggested that as a beginning a line with a length underground of 7 route-miles should be put in hand at a total cost of £25 million. Small cities might consider the electrification of their suburban railways and their integration with underground lines as being a not-too-costly solution of their traffic problems. Costly though they were, underground railways were probably cheaper than street widenings, and an underground railway could handle more than 100,000 people in the rush hour in two directions of traffic.

U.S.A. Railway Passenger Services

LAST year the U.S.A. railways operated freight trains on 225,340 route-miles, but ran passenger services on 150,350 miles only. Since 1939 the railways have withdrawn passenger services from 21,200 miles of road—more than the first track-mileage of British Railways. In 1950 the rate of withdrawal was intensified and passenger trains ceased to run on 5,550 miles, spread over all the regions into which the railways are grouped. Passenger train-miles decreased in total by 6·5 per cent. as compared with 1949, the average number of trains run over a mile of road shrinking to 6·5 per day.

The Pennsylvania is the largest passenger carrying railway in the U.S.A. It earns 17·5 per cent. of the total passenger revenue of the Class I railways and used to run on an average 20 trains a day over each mile of road. During the last three years it has abandoned 460 miles of passenger-train service and now carries passengers over only 5,660 of its 10,042 route-miles. The number of trains per mile of road per day dropped to 18 last year. Many of these trains are very heavy, and travel over routes with stiff gradients, but recorded an average speed of 43·8 m.p.h. in 1950. The Union Pacific achieved a speed of 46·1 m.p.h., but worked no more than 7·6 passenger train-miles per mile of road per day, and had a sparse freight traffic, compared with the Pennsylvania's heavily burdened lines. The average passenger-train speed for all U.S.A. railways was 37·4 m.p.h.

These train speeds are not high enough to satisfy the American people, who are deserting railway parlour and sleeping cars for air liners. In 1945 air lines carried little more than 11 per cent. of the combined railway and air first class travel; last year they took over 45 per cent. Air passenger-miles were 18·3 per cent. above 1949, while railway first class passenger mileage decreased by 9 million, or one per cent. below the 1949 level. If this trend continues, further reductions in U.S.A. railway passenger services appear to be inevitable.

Summer Train Services, Eastern and North Eastern Regions

SELDOM on British railways has there been such a revolution in a steam-worked main-line train service as that taking effect over the Colchester main line of the Eastern Region from July 2. It has some parallel in the "radical alterations" timetable introduced on the Great Eastern Railway in October, 1914, by Sir Henry Thornton, who had come from America as General Manager earlier that year The 1951 timetable, however, is far more systematic. The Liverpool Street to Shenfield electrification has made possible considerably higher steam speeds over this section than it would have been possible to devise paths for previously; and the advent of ten Pacific locomotives has brought about considerable acceleration between London and Norwich.

For trains to be worked normally by Class "7" Pacific engines, three ranges of loading, with proportionate timings, have been laid down: a maximum of nine bogies for the fastest trains (300 tons); ten to twelve bogies (up to 400 tons); and thirteen bogies or over. For "B1," "B12," and "B16" class 4-6-0 locomotives there are the same three classifications, with an additional one up to 350 tons (ten bogies). The fastest point-to-point timings apply equally to semi-fast and to the fastest trains, if Pacific-hauled, and consequently some of the fastest bookings on record from and to Liverpool Street appear in the timetable, such as 36 min. to and 37 min. from Chelmsford (29·7 miles), compared with 46 and 44 min. in the current timetable; 76 min. to and 77 min. from Ipswich (68·7 miles), now 85 and 86 min.; and 130 min. to and from Norwich (115·0 miles), now 140 min. The best pre-war London-Norwich time was 130 min., once daily each way with a six-coach train.

The best time from London to Cromer comes down from 3½ hr. to 3 hr. 3 min., and the best to Yarmouth from 3 hr. 10 min. to 2 hr. 39 min. The fastest non-stop trains between Liverpool Street and Ipswich are allowed 50 min. down and 49 min. up for the 49·5 miles between Chadwell Heath and Manningtree: in the down direction this includes running the 10·2 miles from Chadwell Heath to Shenfield, including the entire ascent of Brentwood bank, in 11 min. These times are limited to Pacific locomotives hauling a maximum of 300 tons.

The timetable in general has been entirely reconstructed. Departures from Liverpool Street for Norwich are at 30 min. past the hr. Of these the 9.30 a.m. ("Norfolkman"), 12.30, 3.30 ("Broadsman"), and 6.30 p.m. ("East Anglian") are all 130 min. trains to Norwich, calling only at Ipswich. Other Norwich trains make from seven to nine intermediate stops each.

In the up direction, departures from Norwich for Liverpool Street generally are at 45 min. past the hr. The 130 min. trains are at 11.45 a.m. ("East Anglian"), 2.45 and 5.45 p.m. ("Norfolkman"): other fast services are the 7.45 a.m. ("Broadsman"), in 142 min. with three stops,

and the 6.45 p.m., in 144 min. with three stops. The average time of the ten fastest trains between Liverpool Street and Ipswich has been cut by 21 min., and of fifty fast and semi-fast trains by 15 min. each.

Timings to and from Yarmouth and Lowestoft are slower, as Pacifics will not be used over the East Suffolk line. The "Easterling" is reintroduced, at 11.3 a.m. from Liverpool Street, first stop Beccles (109·2 miles), reaching Yarmouth at 1.42 p.m. and Lowestoft at 1.45 p.m., returning at 7.10 p.m. from both Yarmouth and Lowestoft, reaching London at 10 p.m. (Before the war, the fastest time between Liverpool Street and Yarmouth was 2¼ hr., though in Great Eastern days the journey was made in summer in 2½ hr.). This summer there will be one train from Liverpool Street to Lowestoft in 2½ hr., at 3.3 p.m., but on Saturdays only. On weekdays, Yarmouth will benefit considerably by the accelerated Norwich service, connections with which (to and from Yarmouth Vauxhall) will give times of a few minutes over 3 hr. between Yarmouth and London at various hours of the day.

To fit in with the remodelled Norwich service, the Clacton "interval" trains are moved from 30 to 36 min. past the hr. from Liverpool Street, hourly from 8.36 a.m. to 9.36 p.m., except 8.36 p.m. There is a Monday to Friday relief at 11.23 a.m., non-stop to Thorpe-le-Soken. Departures from Clacton remain at the even hr. from 8 a.m. to 8 p.m. inclusive. This service on Saturdays includes several non-stop trains, one of which, at 12.22 p.m. down, makes the run in 90 min., equalling the fastest pre-war run. There are up trains on Saturdays at 10.50 a.m. and 12.50 p.m. in 94 and 93 min. The 8 p.m. "Hook Continental" is accelerated 10 min., to reach Parkeston Quay in 90 min., and there are timings of 90 min. or a shade less for most regular and conditional Continental workings between Liverpool Street and Parkeston Quay each way.

The non-stop "Capitals Limited" between Kings Cross and Edinburgh is reintroduced, with its running time cut to 7 hr. 20 min. in each direction (53·6 m.p.h.). This is a very close approximation to the pre-war 7 hr. allowance. The through Aberdeen section of this train reaches Aberdeen in 11 hr. 6 min. from London. The "Flying Scotsman," calling only at Grantham and Newcastle, is now to be allowed 7 hr. 38 min., and brings Newcastle within 5 hr. of Kings Cross in each direction. The southbound "Tees-Tyne Pullman" is accelerated to run the 232·3 miles from Darlington to Kings Cross in 4 hr. (58·1 m.p.h.), arriving at 2 p.m., in 4¼ hr. from Newcastle. In the reverse direction (4.45 p.m. from Kings Cross) it is allowed 4 hr. 5 min. to Darlington and 4 hr. 52 min. to Newcastle.

York is brought within 3½ hr. of Kings Cross by the 9.40 a.m. down Newcastle train, and the "Scarborough Flyer" (Fridays and Saturdays only northbound) makes this run in 3 hr. 29 min. including a stop at Grantham, which is reached in 114 min. from Kings Cross. With the "Queen of Scots Pullman" the non-stop time between Kings Cross and Leeds is cut to 3 hr. 25 min. for the 185·8 miles northbound, and to 3 hr. 26 min. southbound. Most expresses have been accelerated by 4 to 5 min. between Kings Cross and Grantham by the removal from the working timetable of recovery margins on both sides of Peterborough.

In the North Eastern Region nearly all trains have been slowed between Newcastle, Berwick and Edinburgh. The 2 p.m. from Edinburgh to Kings Cross ("Heart of Midlothian") loses 12 min. to Newcastle and reaches Kings Cross 7 min. later, at 10.2 p.m. The 10.5 a.m. from Kings Cross to Glasgow, after running the 66·9 miles from Newcastle to Berwick in 73 min., has its allowance over the 57·5 miles from there to Edinburgh increased by 11 min., from 71 to 82 min., losing 13 min. from Newcastle to Edinburgh. But the accelerations south of Grantham make it possible still to maintain most overall times. Very fast running is still performed between Darlington and York, however; over this 44·1 miles there are one run in 43 min. (the "North Briton"), four in 44 min., and two in 45 min., as well as two in the opposite direction in 45 min. and five in 46 min.

Among novelties the 9.20 a.m. from Newcastle to Carlisle works through to Glasgow St. Enoch *via* Dumfries and Kilmarnock, with a corresponding return service at 12.50 p.m. from St. Enoch to form the 3.55 p.m. from Carlisle to Newcastle. Amongst new week-end facilities between industrial centres and coast resorts are the 11.5 p.m. Manchester Victoria to Norwich Thorpe and Yarmouth Vauxhall on Friday nights. The 12.10 p.m. relief from Kings Cross to Newcastle on Saturdays runs non-stop from Grantham to Thornaby, thence *via* Stockton and Sunderland. There are no changes of note in the Western Section (former G.C.R.) of the Eastern Region.

Freight Movement on British Railways

(By a Correspondent)

SINCE the article in the June 1 issue was written, the Railway Executive has announced that summer passenger services will be curtailed so that arrears of freight traffic can be cleared up. A statement made by the Chairman of the Executive to a Press conference might give the impression that the loss of freight mobility was widespread. *Transport Statistics* for the four-week period to April 22 confirm that the seat of the trouble is in the London Midland and Western Regions. The table below shows the variation in the volume of work falling on these Regions and the Eastern Region, compared with the April, 1950, period; it also contrasts the operating results of the three Regions in the same way.

Percentage variation between April, 1951 and 1950.

	London Midland Region	Western Region	Eastern
1. Tons originating :			
Merchandise	+ 4·9	+ 2·1	+ 14·8
Minerals	+ 6·4	+ 4·9	+ 8·1
Coal	+ 10·3	+ 5·9	+ 6·9
Total	+ 8·2	+ 4·8	+ 8·4
2. Net ton-miles :			
Merchandise	+ 4·0	+ 0·4	+ 17·1
Minerals	+ 5·7	+ 0·9	+ 0·9
Coal	+ 5·3	+ 3·8	+ 14·2
Total	+ 5·0	+ 2·0	+ 11·4
3. Freight train-miles	+ 3·3	+ 4·9	+ 7·1
4. Wagon miles	+ 4·1	+ 4·3	+ 7·4
5. Train engine hours in traffic ...	+ 9·7	+ 11·6	+ 4·5
6. Net ton-miles per train engine hour	+ 3·7	+ 8·3	+ 5·7
7. Wagon miles per train engine hour	+ 4·4	+ 6·2	+ 1·8
8. Freight train speed	+ 5·8	+ 6·0	+ 2·5

The first four items in the table indicate that the Eastern Region had a large increase in work and the other four items show improvement in its operating results, while the London Midland and Western Regions slipped back. The Eastern Region is comparable in size with the Western; its originating tonnage was about 7 per cent. less, but it worked 7 per cent. more ton-miles. The traffic of the two regions is not widely dissimilar, both being large carriers of coal and minerals. The Great Western Railway used to produce some good statistics, but for the time being mobility is superior on the eastern side of the country. The North Eastern Region reached a freight train speed of 10·39 m.p.h. in April and worked 1,435 net ton miles per train engine hour. The Scottish Region had a higher speed of 10·56 m.p.h., in spite of a 2·3 per cent. increase in ton mileage. With the small average train load of 118 tons, Scotland worked 1,028 net ton miles per train engine hour, coming close to the L.M.R. figure of 1,046.

It is gratifying to find so much that is reassuring in the statistics for three of the heavy Regions north of the Thames. The misfortune is that their satisfactory results are depressed by the poor returns from the London Midland and Western Regions in the course of preparing all-line figures. There is need for what was termed in the previous article "a calmly worded statement" about the difficulties which exist in certain districts around Birmingham and in South Wales. The unified railways have failed to avoid traffic blocks in these areas over a period of 5 or 6 months and in the absence of a more detailed explanation than has been given so far, the volume of adverse criticism of railway efficiency is bound to grow.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Return Tickets

May 24

SIR,—Colonel Hedley, writing in your April 20 issue, is surely mistaken in thinking that the outward half of a monthly return ticket is only available for three days. I am unable to find a British Railways announcement on the subject, but in the G.W.R. timetable for the winter of 1947-48, it is stated that "monthly return tickets are available for use on the outward and return journey any day within one calendar month from the date of issue." Although unable to recall specific examples, I am sure that on many occasions I have broken the outward journey for more than three days and have never been challenged on the grounds that my ticket was out of date.

Yours faithfully,

PETER W. B. SEMMENS

52, Belle Vue Grove, Middlesbrough

[We are informed by British Railways that outward and return halves of monthly return tickets may be used any day within a calendar month from the day of issue.—ED., *R.G.*]

Where Passenger Traffic Loses

May 21

SIR,—The editorial in your May 18 issue reminds one of Winston Churchill's quip that, if we had no meat, it would be a pity if we had no logic as well. For 4 years U.S.A. rail travel has shrunk like our meat ration, but *Railway Age* says that the loss is all due to a wicked I.C.C. formula! What the article does expose is the falsity of its own reasoning. I hope it will not weary you to set out the facts.

The volume of U.S.A. rail travel in 1950 was 30 per cent. (measured in passenger miles) below 1947 and the decrease in passenger revenue was 15 per cent. During the same period the volume of freight traffic (in ton-miles) decreased by 9 per cent., but freight revenue increased by 11 per cent. Put in another way, in 1947 freight revenue was 7·3 times, and in 1950 9·6 times, the "passenger revenue."

Naturally the senders of freight say they are paying the losses on passenger travel, which the I.C.C. estimates have increased from $101,000,000 in 1947 to $251,000,000 in 1949, excluding losses on head-end traffic. The *Railway Age* suggests these are not real losses because on the Santa Fe passenger revenue exceeded out-of-pocket costs, calculated on some basis not fixed by the I.C.C.

Now the Santa Fe runs 23,600,000 coaching train miles a year, or 7 train miles per day over each of its 9,260 miles of road, and the average speed is 43·6 m.p.h. The preparation and upkeep of high-speed services of that size must create a great mass of work, apart from actual train movements. So the I.C.C. debits 29 per cent. of the President's salary to passenger train service. That does not seem unreasonable as for 17 years Mr. F. C. Gurley has specialised in the design, construction and operation of streamliners. And so on with other men and things.

In spite of the fine train service the Santa Fe's passenger receipts decreased from $50,200,000 in 1947 to $44,800,000 in 1950, or by 10 per cent. Over the same years freight receipts increased by $51,800,000 (more than the total passenger revenue), or 14 per cent., to $422,200,000. The profits from these big freight earnings must provide the bulk of the expenditure on improvements which the railway is making from year to year. In reducing or eliminating 1,100 curves, it has spent $23,500,000—and many of these works would be for the benefit of the streamliners, which also demand high-class signalling not needed for freight services.

Head-end traffic does not come into the question at all. In any case the loss on head-end should be less in future. An adjustment of charges last year increased the mail revenue of U.S.A. railways by $151,000,000, or 67·9 per cent. For January and February, 1951, the increase from mail was nearly 9 per cent.; express revenue for these months was up 14 per cent.

The Korean war and defence programmes have sent passenger revenue up this year by 11·3 per cent. in January and February; the increase in March is understood to be higher. There can be no stability about a branch of railway business that thrives only in national emergency.

(Throughout, passenger revenue or receipts denotes takings from passengers—mail, express, milk, and other things are excluded.)

Yours faithfully,

R. BELL

Frognal, N.W.3

Track Maintenance and Renewal

May 29

SIR,—We have read with interest the summary in your May 25 issue of Mr. E. C. Cookson's paper on "Methods of Effecting Economy in Track Maintenance and Renewal." The references to steel sleepers deal with types laid some 15 or 20 years ago. In comparing wood with steel it is misleading not to bear in mind that whilst Nature will have done nothing to improve, during the last two decades, the quality of the one, the steel maker and designer have done much to lengthen the life of the other.

Apart from any advance in manufacturing technique and design the significant change from bullhead to flatbottom track has made the use of the steel sleeper a more workmanlike proposition. Mr. Cookson was doubtless referring to steel sleepers for bullhead rails which were notoriously more difficult to accommodate than the flatbottom type.

The flatbottom rail is, furthermore, an easier section to insulate from the sleeper for track-circuiting purposes. The Swiss Federal Railways have had under trial for two years steel sleepers where track circuiting is employed, and so far the results have been satisfactory. A well-designed sleeper for track circuiting could be produced without difficulty for use with the 109-lb. per yd. F. B. section at present being laid in this country.

Mr. Cookson's description of the perfect rail fastening calls to mind the system incorporating a special soleplate and clip which the Norwegian State Railways have recently adopted and which is being tried out elsewhere.

Yours faithfully,

T. S. KILPATRICK
Director & Commercial Manager

Workington Iron & Steel Company, Workington

Rubber-Tyre Coaches in Switzerland

May 22

SIR,—We have noted the article "Rubber Tyre Coaches in Switzerland" in your May 18 issue with great interest.

We should like to draw your attention to an error in that text which might give your readers a somewhat faulty conception of the part played by our firm in the development of rubber-tyre coaches. On page 561, first column, paragraph two, it is said: "The bodies have been built by the Société Industrielle Suisse and the two pairs of five-axle bogies by the Etablissements Carel, Fouché & Cie."

Actually it was our firm which by order of the Swiss Federal Railways built the body of the third class lightweight steel coach; the Société Industrielle Suisse has developed the body of the second class coach of light-alloy construction. For both these types of vehicles the five-axle bogies were, as mentioned correctly in your article, supplied by Carel, Fouché & Cie., Paris.

Yours faithfully,

K. FÜCHLIN
Director

Swiss Car & Elevator Manufacturing Corporation Limited,
Schlieren, Zurich

XUM

THE SCRAP HEAP

First and Last

The Banbury to Kingham branch line was closed permanently on June 2 to passenger traffic between Kings Sutton and Chipping Norton as an economy measure. The last ticket from Bloxham to Kings Sutton was issued to 77-year-old George Manning, who, as a 14-year-old boy, bought the first ticket issued in 1887.—*From "The Times."*

Talyllyn Tunnel Plaque

Mr. John Crichton Parry de Winton, representative of an old Brecon family which has been associated with transport in that neighbourhood for more than 150 years, presided at a pleasant gathering at Talyllyn Station (Brecon) on May 23, when a plaque recording the antiquity of Talyllyn Tunnel was unveiled. The banking house of Wilkins & Company, founded by Mr. de Winton's ancestors, financed the early canals and tramroads in the area.

The Hay Railway was formed in 1811, and John Hodgkinson, its Engineer, recommended building Talyllyn Tunnel, which was authorised by an Act of May 20, 1812. It was opened as part of the Brecon-Hay section on May 7, 1816. This early railway was taken over in 1859 by the Brecon & Merthyr Railway, of which Mr. de Winton's great grandfather was Chairman; the tunnel was enlarged and reopened on May 1, 1863. In his remarks at the unveiling ceremony Mr. de Winton said that his attention to the antiquity of the tunnel was attracted by a paragraph in *The Railway Mazazine*, and he acknowledged the help of Messrs. Charles E. Lee and D. S. M. Barrie in the subsequent arrangements for the Brecon Chamber of Trade (of which he was President) to erect a commemorative plaque, through the courtesy of Mr. K. W. C. Grand, Chief Regional Officer of the Western Region of British Railways. The plaque had been made at Swindon Works to the design of Mr. Jestyn Williams. This plaque, adjacent to the down platform of Talyllyn Station, was then unveiled by Mr. John Davies, J.P., who joined the staff of the Brecon & Merthyr Railway 75 years ago, and celebrated his 89th birthday on May 21. The ceremony was attended by the Lord Lieutenant of the County, the High Sheriff, the Mayor of Brecon, and representatives of the Western Region of British Railways.

A Disappearing Trick

A stage magician and hypnotist, who claimed that he became destitute after his magic "props" were stolen from a railway parcels office at Launceston, was given judgment in the King's Bench Division in his action against the Railway Executive, which denied liability and breach of contract.

"There can be no doubt," said the judge, "that taking care of such articles is an essential part of the duty of a bailee, and the importance of preventing unauthorised persons having access to articles left in a cloakroom cannot be over-emphasised."—*From "The Evening News."*

Last Train

. . . There must be something painful about setting out, by rail, for the last time . . . rather like saying farewell to the school one has attended unmindful of its deep significance until the day one leaves.

British Railways have little sense of the occasion. They lop off branches without any apprehension that the tree itself may wither and die. And, when they doom the sap in one more branch they don't even bother to organise funereal rites.

The last trip on an old branch line should take place in the atmosphere of rather a jolly wake. Painters and poets should be given the courtesy of the line; drivers and porters should keen freely; signals should carry bands of crepe; and there ought to be much elegiac tooting of locomotive whistles.—*From "The Scotsman."*

Bargain Travel

To many places the railway offers fares for the day lower than any bus or coach, not to mention such bargain travel as is offered by the "runabout" tickets.

Why then the increasing slump in passenger traffic? Is it that the public is ignorant of the good things offered by rail since the daily train journey to work became less universal? Perhaps the lack of "salesmanship" and courtesy towards prospective customers has something to do with it. As a regular railway user myself I am frankly puzzled.—*From a letter to "The Manchester Guardian."*

I.e., "No"

For those who treasure samples of official jargon, here is a collector's piece from the offices of British Railways (Western Region) at Shrewsbury: "It is therefore regretted that declinature of the claim has to be maintained . . ."

My "Oxford English Dictionary" quotes the most recent use of the word "declinature" as in 1885. *The Manchester Examiner* employed it to describe "the reported declinature of office by the Marquess of Salisbury."—*"Peterborough" in "The Daily Telegraph."*

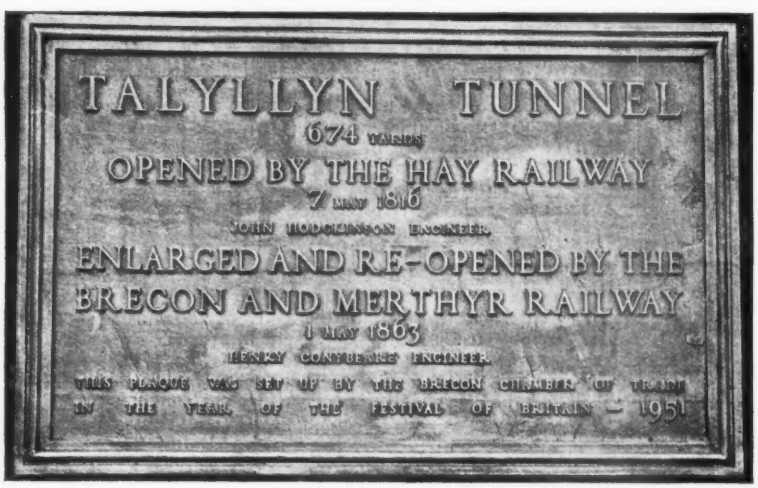
To a Diesel

Diesel, diesel, burnished bright,
Where do you conceal your might?
How can you perform such toil
On a tummy-full of oil?
Should you feel you need a snack,
Somebody must learn the knack
Of selecting the right tap
For your proper dose of pap.
Yet, it seems, you pull your weight,
Be it passenger or freight.

Gliding soullessly along,
Not for you the siren song
Dear to every footplate man
Since the age of steam began.
Neither gleam, nor glow, nor spark
Lights your progress through the dark;
You're about as glamorous
As a rural omnibus.
Could you ever kindle joy
In the heart of any boy?

Yet I've known you cause a fuss,
When you reach the terminus,
If, when making up lost time,
You've collected grease and grime.
Then, since all things feminine
Are akin beneath the skin,
Your distressfulness demands
Loving service, tender hands,
Titivating you with taste
And a bit of oily waste.

A. B.


TALYLLYN TUNNEL
674 YARDS
OPENED BY THE HAY RAILWAY
7 MAY 1816
JOHN HODGKINSON ENGINEER.
ENLARGED AND RE-OPENED BY THE
BRECON AND MERTHYR RAILWAY
1 MAY 1863
HENRY CONYBEARE ENGINEER.
THIS PLAQUE WAS SET UP BY THE BRECON CHAMBER OF TRADE
IN THE YEAR OF THE FESTIVAL OF BRITAIN — 1951

Plaque at Talyllyn erected to commemorate the opening of the tunnel in 1816 *(see paragraph above)*

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

VICTORIA

Oil and Brown Coal as Fuel

Since the war the railways have suffered from recurring shortages of black coal. Before the war they relied on the State Coal Mine at Wonthaggi and New South Wales for supplies of locomotive coal.

Adequate supplies of Maitland (N.S.W.) and lower-grade coal and imported coal from South Africa and India for locomotives are becoming increasingly difficult to obtain. The railways have therefore been obliged to resort to substitute fuels, oil, and even firewood (in winter) where there is no fire danger from the emission of sparks. Conversion of 82 locomotives from coal to oil-burning was begun in June, 1946, and was completed two years later.

It was decided recently to convert four Class "S" engines to oil-burning and convert also 60 Class "J" and 27 Class "X" locomotives on order. In addition, another Class "X" engine is now being converted to burn pulverised brown coal. It is being fitted at Newport Workshops with firing equipment imported from Germany. The first Class "X" engine to burn pulverised brown coal has been running on passenger and goods trains for about twelve months and has won a reputation for reliability and good timekeeping.

TASMANIA

Level Crossing Accidents

A special committee of the Australian Transport Advisory Council, attended by representatives of the Tasmanian Transport Commission, recently carried resolutions to the effect that all States should adopt the practice of erecting "stop" or "halt" signs at open level crossings where it may be considered that vehicles should be brought to a stop. Such signs should be preceded either by an additional sign to be placed between the advanced warning sign and the "stop" or "halt" sign or by variation in the design of the advance warning sign to indicate that vehicles must be prepared to stop before reaching a crossing.

Where considered advisable it was resolved that the number of railway tracks over the crossing should be displayed on the post supporting the stop sign.

In Tasmania, electrically-operated flashing type warning signals are in use at numerous crossings. The average capital cost is £A400 and maintenance £A50 per installation financed from the petrol tax. Standard warning signs are paid for by the Transport Commission from motor registration fees.

Traffic Increase Forecast

A five-fold increase in the volume of passenger traffic was recently forecast by the Commissioner for Transport. He stated that, although road haulage had extended the area of operation, its development must not be at the expense of the railways, which were costing the State much to modernise.

EAST AFRICA

Services Interrupted by Floods

As briefly stated in our April 13 issue, exceptionally heavy rainfall in March and April dislocated services considerably. The Mombasa-Nairobi line was blocked for four days near Sultan Hamud by a serious accident to a goods train caused by floods washing away the road bed. The engine rolled down the embankment, and a number of wagons were derailed. The African fireman was killed instantly, and the Asian driver died the next day.

The Voi-Moshi line was closed for a fortnight because of severe damage to a bridge. The Magadi branch, which serves the Magadi Soda Company was closed for some time because of washaways and damaged bridges. In one of the rivers crossed by this line no water had flowed for fifteen years.

Although the interruption to communications has greatly interfered with movement, no serious delays to traffic have occurred.

SAUDI ARABIA

Progress of Railway

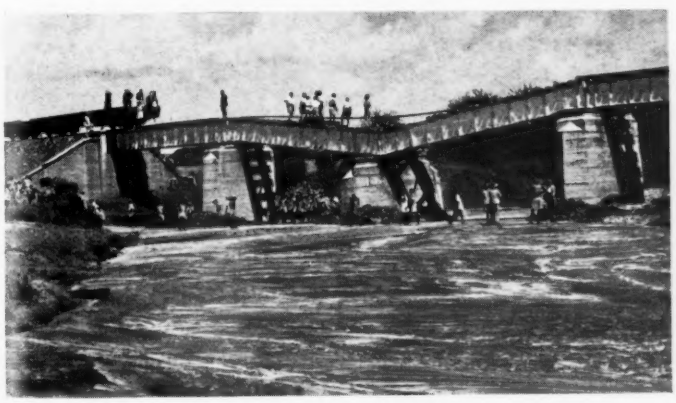
Further to the article in our April 20 issue, we learn that it is planned to open the railway which is being built by the Arabian American Oil Company, to Riyadh, the capital, on January 1 next. There are some 100 miles to be completed and it is hoped to maintain progress at the rate of half-a-mile a day. Twelve refrigerator vans are on order from the U.S.A. and other freight stock from Belgium.

The Government is reported to be discussing an extension to Jeddah, as foreshadowed in our article. This would be entirely a State project.

FRANCE

Subsidies to Cover S.N.C.F. Deficit

During a recent debate in the National Assembly on a plan to reduce expenditures by fr. 25,000 million (about £25,000,000) to balance the budget, it was proposed to cut the government grant to the National Railways by fr. 5,000 million. M. Antoine Pinay, Minister of Public Works & Transport, intervened to oppose the reduction. In a brief review of the financial situation of the S.N.C.F. he stated that the estimated deficit of the railways was fr. 97,000 million (£97,000,000). He declared that the proposed economy was an illusion and urged that the second part of the grant, fr. 75,000 million should now be made available. Without it, he said, he could not assure the proper functioning of the railways, pending the reorganisation of rail and road transport. The reduction was rejected by a large majority.



(Left) Damaged bridge at Mile 49.5; and (right) washaway of track, both on the Magadi branch, Kenya & Uganda Section, East African Railways

The New "Golden Arrow"

Festival of Britain Pullman car train which will be placed in service on the London-Dover route on June 11

IN 1938, the Pullman Car Co. Ltd. placed an order with the Birmingham Railway Carriage & Wagon Co. Ltd. for seven new cars. The outbreak of war in 1939 arrested all work on this project, but the drawings, decorative schemes, and so on, had by then been settled and a quantity of material purchased. Construction, however, was held up until circumstances made it possible to recommence work in 1949.

The Festival of Britain provided added incentive and opportunity to renew the project, and with the backing of the Railway Executive and the British Transport Commission, authority was given to proceed with the work. It was decided that these new cars should be used to form a Festival of Britain "Golden Arrow" train, and this necessitated considerable alterations in original design. The new "Golden Arrow" will provide attractive accommodation and include dining facilities and a cocktail bar.

The principal dimensions and weights of the new coaches are as follow:—

Length over buffers	65 ft. 10 in.
Length over vestibules ...	63 ft. 10 in.
Bogie wheel base	8 ft. 6 in.
Width over body	8 ft. $5\frac{7}{16}$ in.
Height, rail to roof	12 ft. $5\frac{1}{8}$ in.

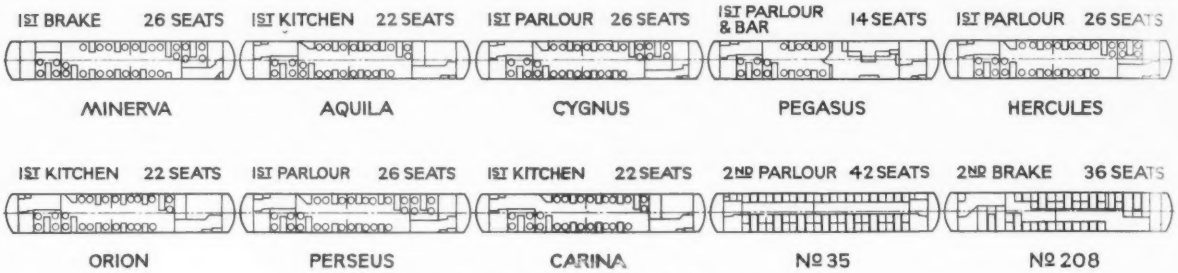
Weights estimated

Parlour car	39 tons 18 cwts.
Kitchen car	40 tons 13 cwts.

The underframes of the new coaches are to the design developed by the former London & North Eastern Railway, together with its type of double-bolstered bogies with a wheelbase of 8 ft. 6 in. The cars are 63 ft. 10 in. over vestibules and of strong timbered construction, well reinforced by steel truss plates and angles, and at the vestibule corner pillars by substantial mild-steel angle sections, all of which are galvanised to prevent corrosion. The bodies have straight sides and are 8 ft. $5\frac{7}{16}$ in. over the panels.

The body panelling is of 14 gauge mild steel, and to lessen the risk of corrosion the panels are metal sprayed with aluminium on both inner and outer faces. The main roof carlines are of mild-steel angle section and the roof panels are welded to the carlines. To improve insulation the interior of the roof and side panels are treated throughout with sprayed Limpet asbestos $\frac{3}{8}$ in. thick.

The main windows are double-glazed, using the latest Pilkington system which has proved successful in the Pullman observation cars. To improve the ventilation of the cars, the depth of the sliding lights has been increased, and in addition, a special design of Vent-Axia fan air extractor has been developed and installed in the roof of each saloon. These have a capacity of ex-



Diagrams showing the formation of the new train

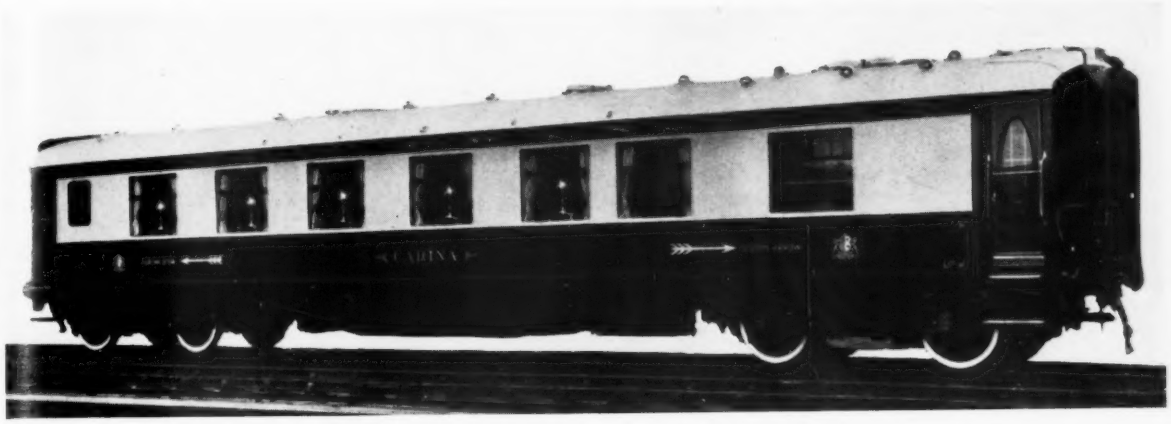
First class kitchen car pantry

Interior of the first class kitchen

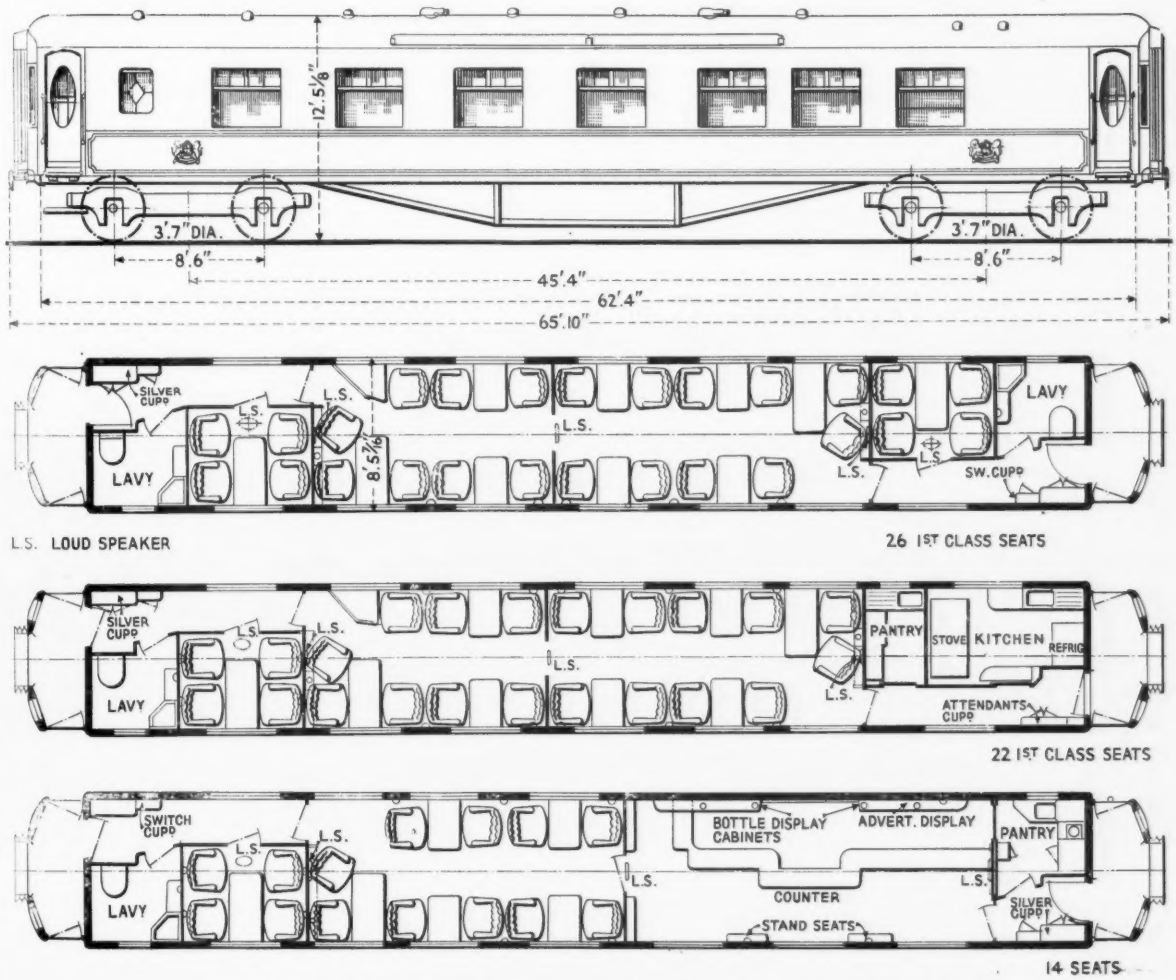
hausting 270 cu. ft. of air per min. with the train stationary.

To provide a free outlet for air being exhausted through the roof, the ventilating unit is equipped on the outside with a revolving cowl fitted with vanes, which ensure that it constantly faces the direction of the greatest wind pressure.

In the new coaches, the oval body side lights have been replaced by lights of a rectangular shape with rounded corners. For many years the oval light has been a feature of Pullman cars; it was, however, considered that the rectangular window would provide more light. The kitchen water tanks fitted in the car roofs are equipped with Smiths electric water-tank indicators of a special design enabling the chef to see at a glance how much water is being carried.



First class kitchen car of the new "Golden Arrow"



Elevation and plans showing the principal dimensions of the new Pullman stock

Each car has a different scheme of interior panelling and finish designed and executed by Waring & Gillow Limited. These schemes consist of quilted maple with anodised aluminium mouldings in old gold, with rust-coloured moquette upholstery; weathered sycamore with anodised aluminium mouldings in old gold, with wine moquette with fleur-de-lys pattern; betula with paldao cross-banding, with wine moquette with trellis pattern; finely figured Australian walnut butt with Australian walnut cross-banding and sycamore bands, with green moquette; straight grained and burr mahogany and cherry burr, with wine moquette with fleur-de-lys; ucaltu and sapeli mahogany, with green moquette; and olive ash and masur birch, with wine moquette with irregular stripe pattern.

The saloons are carpeted in Pullman standard fawn carpet having a trellis work pattern laid on rubber underlay. The chairs have been remodelled in the Preston Park works of the company. Special care has been paid to the decoration of the lavatories, and in the new coaches Warerite laminated plastic panelling in pleasing colour schemes has been used on the walls, while the floors are surfaced with terrazzo, finished in mother-of-pearl, set in a green and black matrix.

The interior metal furnishings are of brass with French old-gold finish, stove lacquered. The lighting fittings, including the table lamps, have been specially designed and manufactured by Best & Lloyd Limited to tone with the interior decorative schemes, and are fine examples of modern English craftsmanship. The train lighting system and equipment for the new cars has been supplied by J. Stone & Co. Ltd.

The "Trianon" Bar

The "Trianon" bar which became famous in the previous "Golden Arrow," will again appear in the new train. A new bar has been built in which the aim has been to provide that pleasant and intimate atmosphere which is such a desirable feature for a successful cocktail bar, and every consideration has been given to comfort.

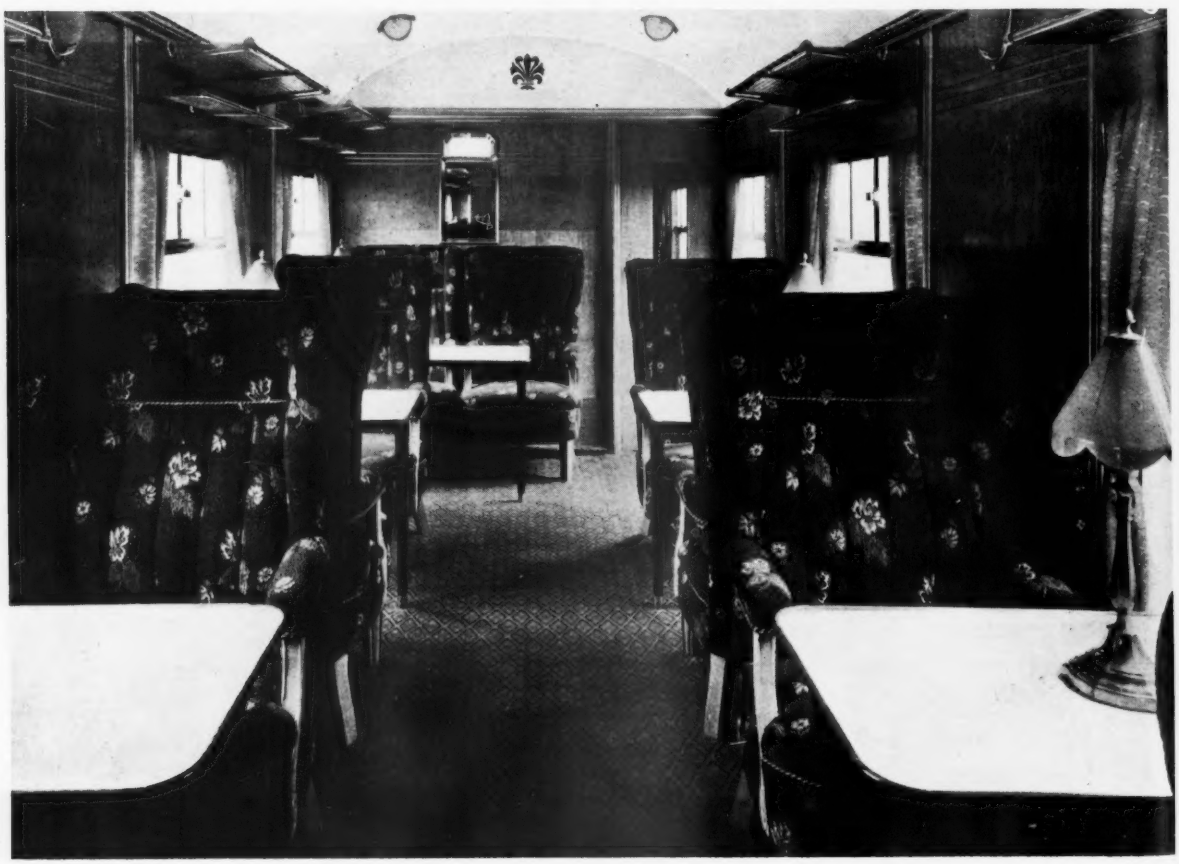
Instead of individual bar stools, ingenious stand-up seats have been provided along the side of the bar. These are about 7 in. in width, upholstered in Dunlopillo and covered in moquette. It was considered that the design offers additional comfort to passengers and at the same time occupies the minimum of floor space.

The counter is designed with a bay portion, again primarily to occupy the minimum floor space. The company considers that experience has shown that this is appreciated by passengers using the cocktail bar. Special attention has also been given to the lighting of this saloon. That portion of the ceiling directly over the bar has been moulded so that recessed lighting can be used. Special luminator lamps have been made for this purpose by Wilfrid Best-Breeden Limited.

To ensure good ventilation the bar saloon is also equipped with two Vent-Axia air extractors. The principal decorations of the bar saloon consists of two handsome aluminium plaques which were specially designed and executed by Starkie Gardner Limited, in collaboration with the Aluminium Corporation Limited. Regular travellers on the "Golden Arrow" will recognise these plaques as having formed part of the decoration of the old "Trianon" bar.

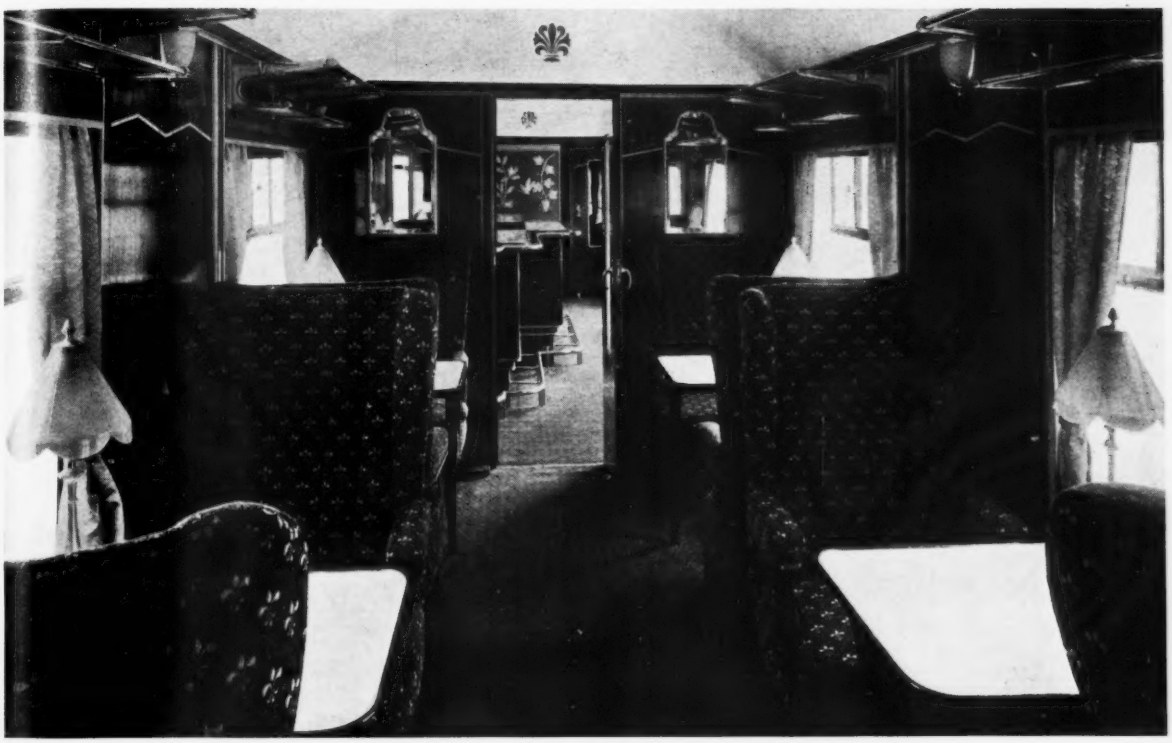
The train is equipped throughout with a public address system. An innovation on the new "Golden Arrow" is the use of Calor gas for cooking on this train. The Pullman Car Co. Ltd. has been experimenting for some time with this medium and considers that it is suitable for the particular requirements of this service. The Calor gas cylinders are housed in steel boxes mounted beneath the underframes of the kitchen cars, and the valves controlling the emission of gas are mounted adjacent to the cylinders themselves. These are of

(*Continued on page* 654)



Saloon portion of first class kitchen car

The New "Golden Arrow"

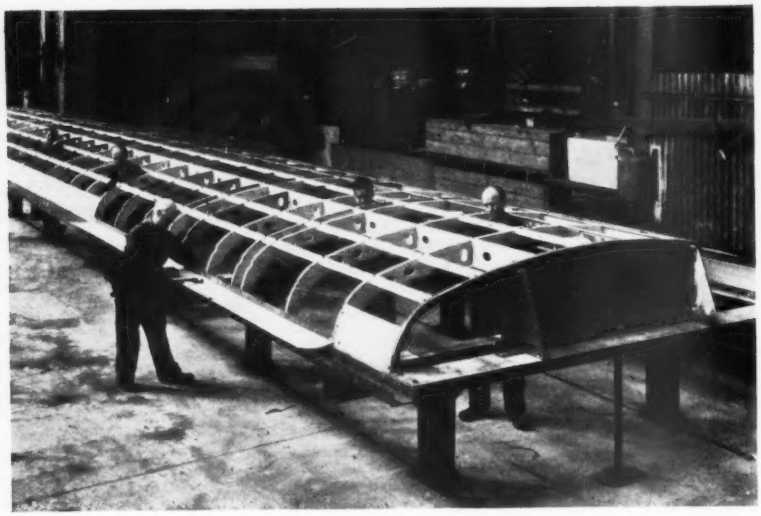


First class seating accommodation in parlour and bar car

The "Trianon" bar of the new "Golden Arrow"

British Modern Lightweight Coaches for Indian Railways—4*

The production of the driving motor coaches for two of the Indian Government Railways is at present being undertaken at the Midland works of the Metropolitan-Cammell Carriage & Wagon Co. Ltd.



Basic structure of roof being assembled in jig

THE structure is built up as a number of large components, each composed of a series of sub-assemblies; every stage in production is carefully jigged and inspected, ensuring complete interchangeability of all parts. The main components of the structure are roof, bodysides, floor structure and body ends, each built up in their respective bays or shops. The completed sub-assemblies converge on the main erection shop, where they are finally assembled to form the coach shell. As different types of coaches are being produced simultaneously, the production techniques are those which would be expected in a factory working on the "batch" type of order.

Roof Structure

As will be seen from the illustration, the structure is built up complete in a jig designed to take the full 68-ft. length, with locations along the complete length of the cantrail, and at key points along every carline. The component parts are received from the press, fitting and machine shops to size and drilled ready for assembly, reducing to a minimum the amount of fitting required at this stage. The novel form of carline, built up from three pressings joined at the monitor rails, is clearly visible. This provides support for the roof sheets in both longitudinal and transverse directions. The $\frac{1}{8}$-in. thick mild-steel stiffening plate can also be seen extending along the lower edges of the roof. This effectively gussets carlines and cantrails.

The cantrails, monitors and carlines are the first parts laid in the jig, thus forming the basic structure; the recesses in the carlines then locate the purlins. All parts are bolted together initially at important points which, while providing a check on the components also minimises the "wave" effect or buckling, which is possible when riveting along the full length of such a car. The stiffening plates along the lower edge are next assembled in convenient lengths, and these are riveted to carlines while the vertical joints in the plates are seam welded. The monitor rails are attached to the carlines by the side flanges of the pressings, both parts then being gusseted on the underside.

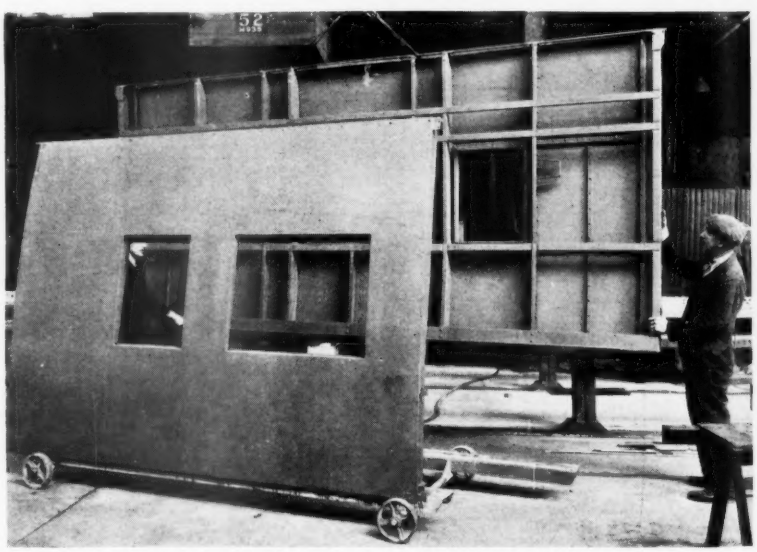
Finally, the aluminium-alloy roof sheets and canopy of the car are assembled and attached by means of hot steel rivets to the steel framing members. Thus the complete structure of the roof is built up as one unit, which can then be hoisted from the jig by means of overhead cranes to be transported to the main erection bay.

Bodysides

The bodysides are constructed in a number of sections or bays extending between double doorways. Two bays are seen in the second illustration, which shows the construction and form of the pillars and skin stiffeners. It is while the bodysides are in this compact and transportable form that they are zinc sprayed before final assembly in the main bodyside jigs. The lower edge is finished by a crib angle which in the main jig locates along the cantilever plate extending the whole length of the car.

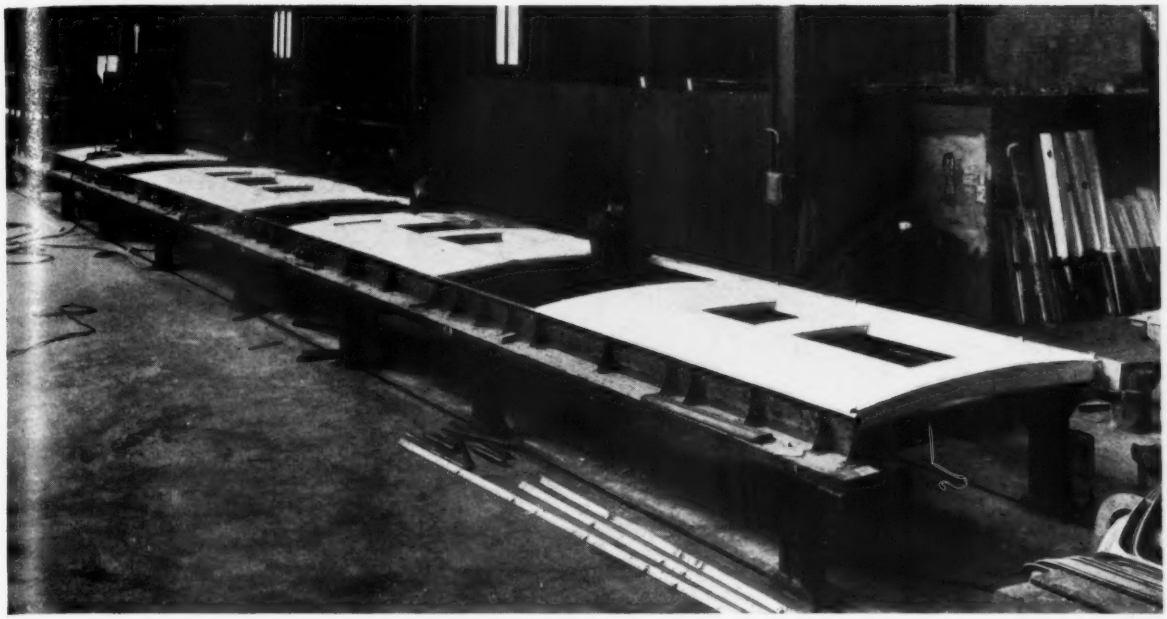
These bays are next located in a bodyside jig, one of which is shown on page 643. The bodysides are manufactured to follow the camber of the car and the locations for the cantilever plate are packed at intervals to give the required degree of curve.

Attachment of bodyside bays to the cantilever plates is by riveting the pillar feet and crib rails through the plate to supporting brackets on the underside of



Two bodyside bays ready for assembly in main bodyside jigs. The smooth exterior surface and the light construction of pillars used will be noted

* Previous articles in this series appeared in our issues of April 27, May 11, and May 25

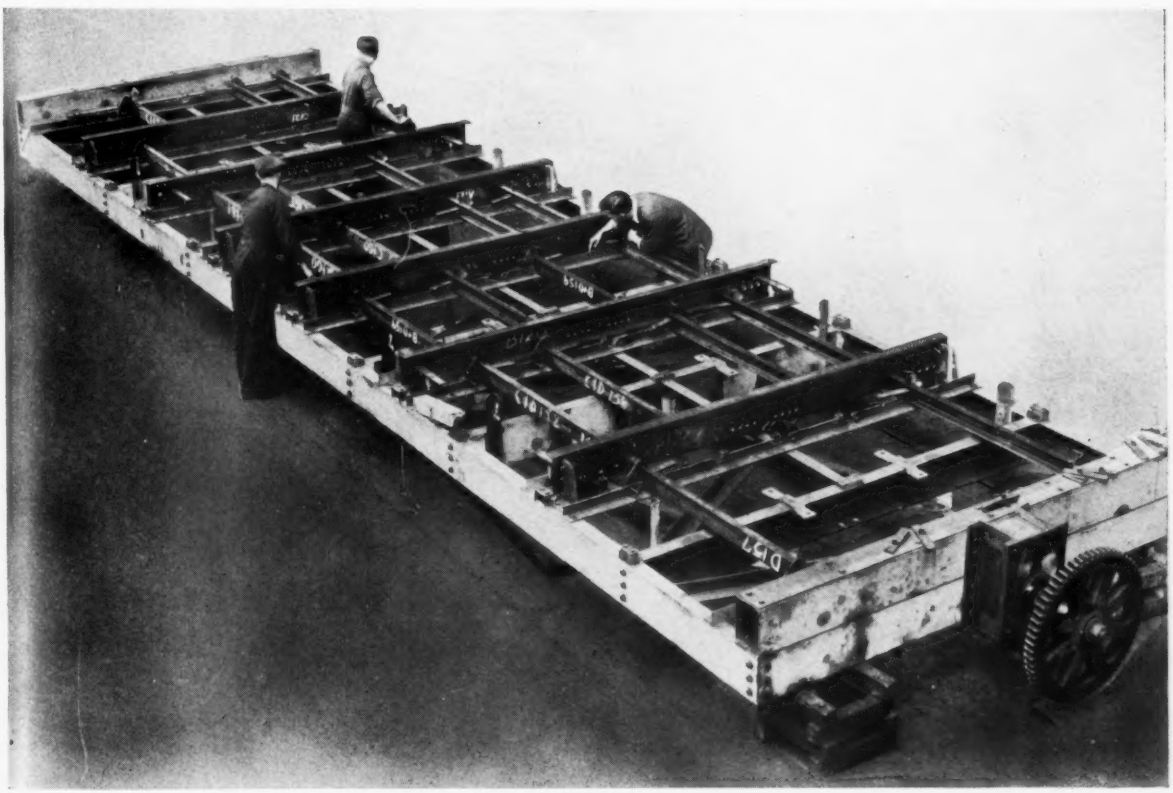


Erection in a main bodyside jig. The connecting brackets which locate between cantilever plate and solebar are shown

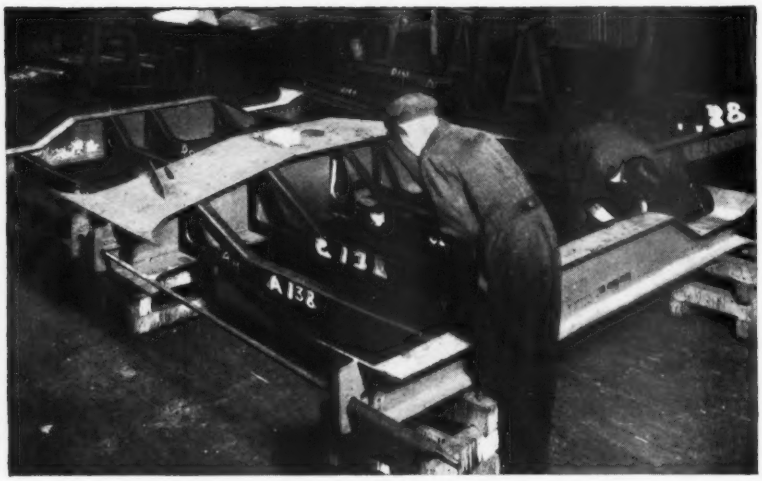
the cantilever plate; the purpose of these brackets is to locate on the solebar web and effectively support the overhang of the bodysides on the finished car. The upper edges of the bodyside bays are joined by the two body cantrails, which are tack welded and riveted to the bodysides.

The door headers are next assembled. They are formed by two steel pressings one within the other, and are riveted to the cantrails; the joints to the upper bodyside panels are seam welded. After assembly in the jig small projections due to weld, etc., are removed by grinding to give a perfectly smooth surface.

The floor structure is built up from a number of welded sub-assemblies



Middle section of floor structure being assembled before welding



Sub-assembly of floor structure, comprising bolster and longitudinal members adjacent to it

arranged to break this large component into manageable parts during the early stages of production. Each of these sub-assemblies is made without the solebar, which, running the whole length of the car in one piece, is not included until the final assembly. As will be seen from the accompanying illustrations, all stages have been carefully jigged and every effort made to arrange that as much welding as is practicable can be completed while the component is in the jig.

Programme for Assembling

The following is the programme for assembly:—(*a*) Centre portion approximately 34 ft. long is assembled in jig and welded complete except for solebars. (*b*) Body bolster assembled and welded. (*c*) Sub-assembly comprising bolster and longitudinal members (except solebars) adjacent to bolster. (*d*) Components of floor structure assembled in main jig. (These are centre section, bolster section, headstock members and solebars. The frame is in an inverted position for convenience, because of the irregularity of the underside, and packed to suit the camber of the whole car. In this jig all important points are located and clamped in position, the solebars being held by twelve clamps along the length of the structure.) (*e*) When welding of underside is completed, the frame is lifted on edge, and welding continued. (*f*) Finally, the frame is lifted to its normal upright position, when welds on upper surface can be completed and the large headstock gusset plate positioned and welded.

Assembly of Coach Shell

The components are next moved to the main assembly bay, where the structure of the whole coach is completed and made ready for the "finishing" shop. A general view is given of the assembly bay, showing a line of driving motor coaches at various stages of erection. Here the floor structure, bodysides, bodyends and finally roof are located in position, welded and riveted to form the complete structure. Before assembly of equipment, all structural members are painted inside and out with protective materials.

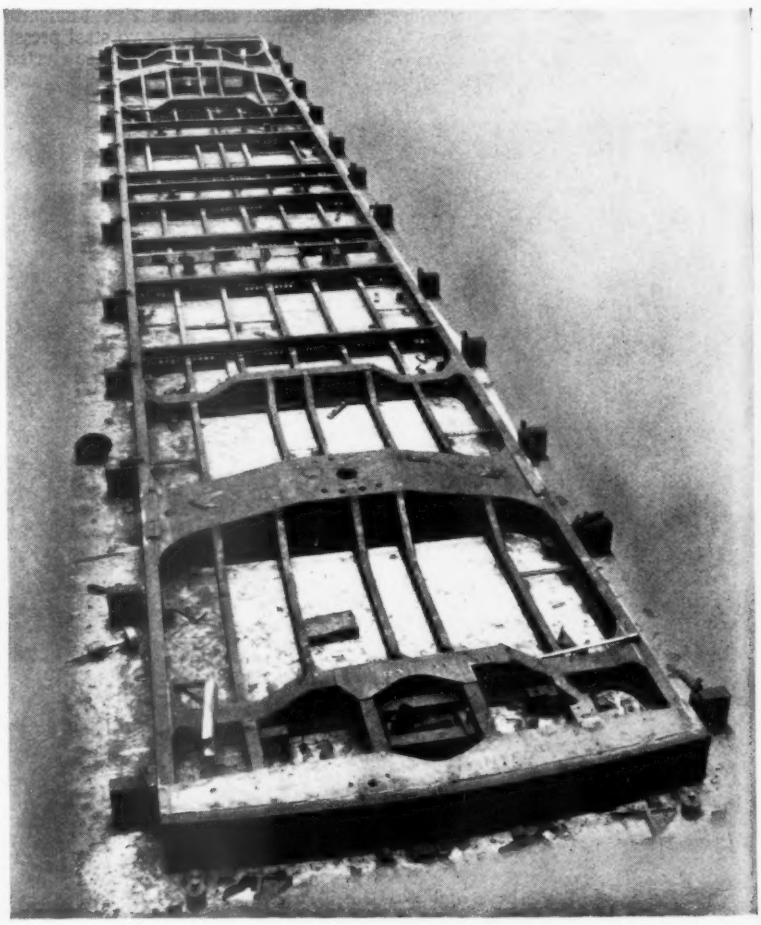
The pantograph, high tension frame and general ancillary equipment are assembled, after which insulating materials and flooring are fixed in position, before finally moving out to have the interior furnishings and fittings assembled in the finishing shop.

The bogies, which up to this stage have followed a different production route, now receive the body, and the unit is ready for final inspection and testing. The production of the bogies calls for careful jigging and inspection at all stages of manufacture, because the riding qualities of the whole coach depend on the accuracy of bogie assembly.

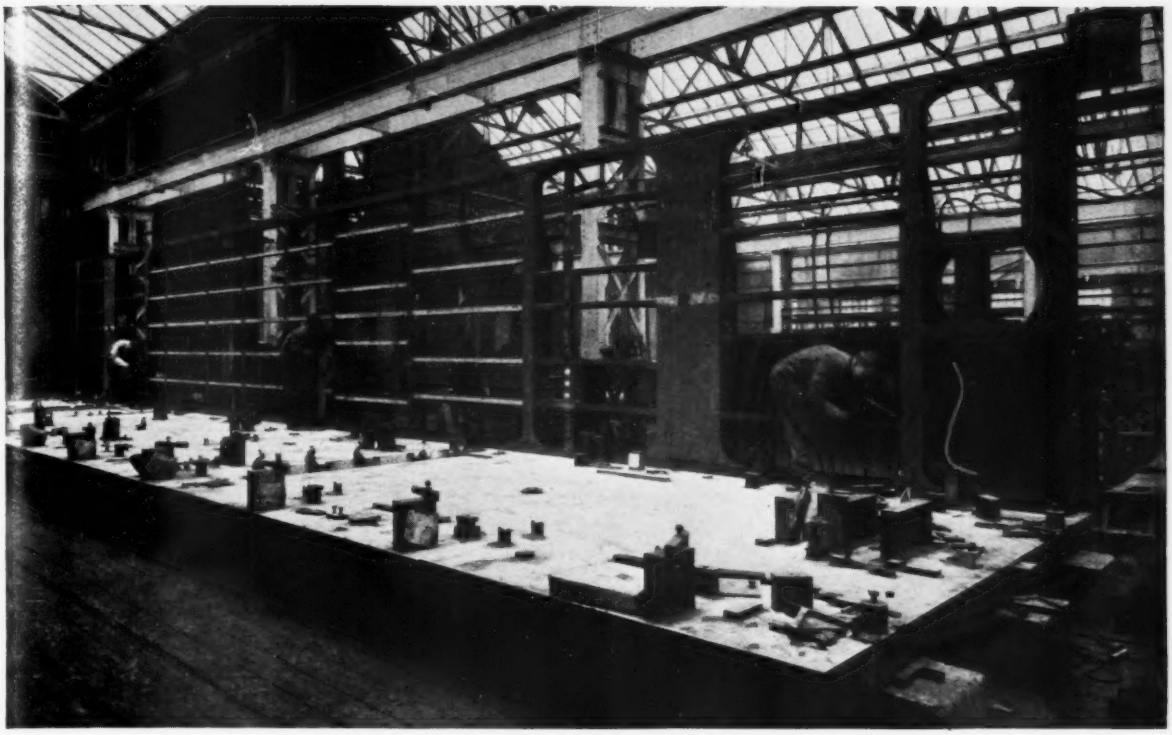
Welded sub-assemblies are stress-relieved before final assembly by riveting and bolting. Each stage of assembly is jigged, and finally a rigid inspection is made of all leading dimensions, ensuring that the frame is "square," the distance between horn cheeks is correct, and all factors affecting parallelism of axles are as required.

Testing of Train Sets

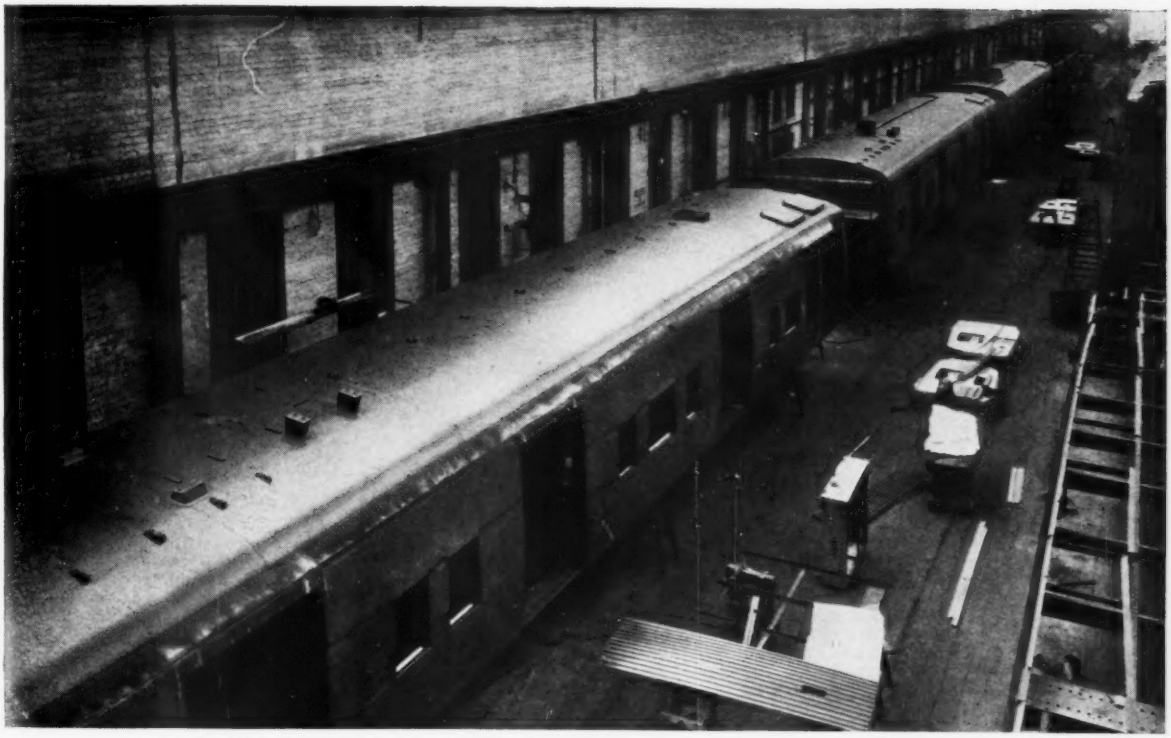
Besides the individual inspection and testing which each car receives at the completion of assembly, train sets are also tested. It is necessary to check the efficiency of the braking systems, con-



Components of floor structure assembled in main jig



Welding continuing after assembly in main jig

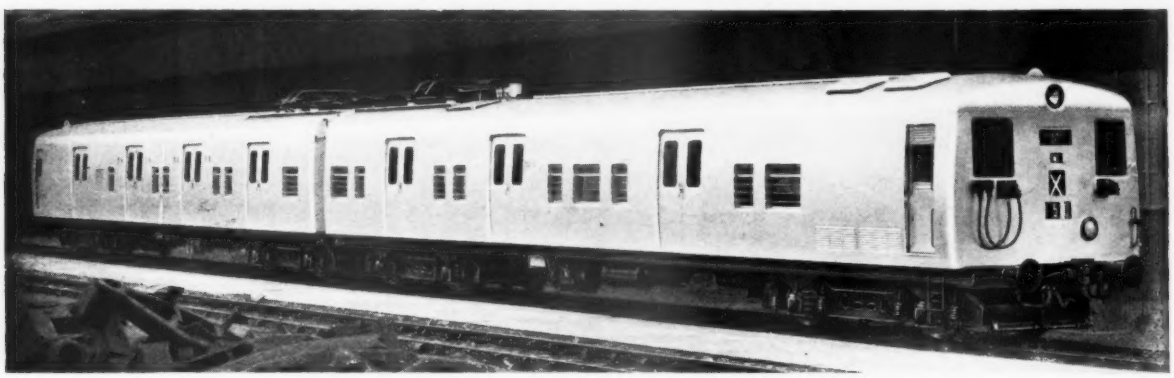


General view of erection shop showing driving motor coaches at various stages of construction

Interior view of coach structure, before assembly of finish panels and furnishing, which gives some impression of the unusual size of this vehicle

tinuity of electrical circuits and the various clearances by coupling a number of coaches together in sets and trains, as will happen in service. This is the ultimate test, and when completed successfully, the coaches are prepared for the journey to India. Special problems necessarily arise relative to the transport of such large coaches, not a few of these being met with on the move from works to dockside. Because of loading-gauge differences, it would be well-nigh impossible to take them by rail over the lines of British Railways, and impracticable by canal, so that it was decided to carry them by road on specially modified road bogies.

(*Concluded*)



Two completed driving motor coaches, coupled for testing at the works

BRITISH STANDARD FOR ROUND STRAND STEEL WIRE ROPES FOR LIFTS AND HOISTS.—This revision (B.S. 329:1951) of the standard previously revised in 1939 was undertaken to include eight-strand ropes and ropes having a tensile range of 70 to 80 per sq. in., the tensile ranges now included being 70 to 80 and 80 to 90 tons per sq. in. A departure from previous practice is that this revision now expresses the size of rope by the diameter and not by the circumference and this brings British practice into line with current practice in other countries. A foreword gives guidance on the use of these ropes. Copies can be obtained from the British Standards Institution, 24, Victoria Street, London, S.W.1, price 3s.

BRITISH RAILWAYS COAL AND STEEL HANDLING.—In the week ended June 4 British Railways cleared 393,220 tons of coal from deep-mined pits and open-cast sites; this makes 3,323,440 tons for the week. The latest figures for iron and steel show that 207,538 tons were conveyed from the principal steelworks during the week ended May 26.

RAILWAY NEWS SECTION

PERSONAL

Mr. Miles Beevor, at present Chief Secretary to the British Transport Commission, has been appointed Deputy Managing Director of the Brush Electrical Engineering Co. Ltd. The British Transport Commission has agreed to release Mr. Beevor so that he will be able to take up his new appointment at the beginning of July.

Mr. M. S. Wilson
Commissioner for Transport in Tasmania, 1939-51

Mr. Wilfrid Oldfield
Chief Mechanical Engineer, Southern Railway, India, who is retiring

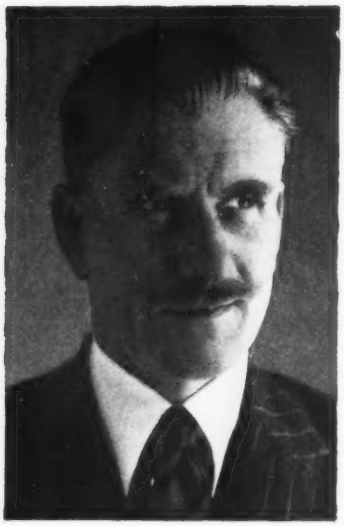
Mr. M. S. Wilson, Commissioner for Transport in Tasmania, who retired at the end of May, joined the New South Wales Railways as a junior clerk in 1903 and spent 14 years in the Office of the District Superintendent at Junee. He was appointed to the Head Office of the N.S.W. Railways, Sydney, in 1922 and in 1931, when the Transport Co-Ordination Act was passed, was transferred to the Department of Road Transport & Tramways as Senior Clerk, Co-Ordination Section. He was Administrative Assistant to the Administrator of Road Transport, Sydney, when he was loaned to the Tasmanian Government in 1938 to report on transport in that State. Mr. Wilson was the first Commissioner for Transport appointed by the Tasmanian Government when the Transport Act came into operation in 1939. This Act was designed to co-ordinate all forms of transport within the State and, as Chairman of the Commission, Mr. Wilson was called on to perform many important duties connected with the new system of transport control. He was twice re-appointed to the office for terms of five and three years. During the second World war, Mr. Wilson, in addition to his duties as Commissioner of Transport, was appointed Chairman of the Liquid Fuel Control Board, Director of Emergency Transport, Chairman of the Commonwealth Coal Committee, Honorary Colonel of the Railway Engineering Corps, and, for a time, Deputy Director-General of Manpower. All these wartime duties were exercised in an honorary capacity.

Mr. H. M. Blackwood has been appointed Public Relations Officer to the Tasmanian Transport Commission.

Colonel Sir Eustace J. Missenden, formerly Chairman of the Railway Executive, has been succeeded as Commanding Officer of the Engineer & Railway Staff Corps, Royal Engineers, T.A., by Colonel V. A. M. Robertson, previously Chief Civil Engineer, Southern Region, and now a Partner in the firm of Sir William Halcrow & Partners, Consulting Engineers.

Mr. Wilfrid Oldfield, M.I.Mech.E., M.I.Loco.E., Chief Mechanical Engineer, Southern Railway, India, who has proceeded on leave preparatory to retirement, was born in 1900. He served a premium apprenticeship at Crewe Works as a pupil of Mr. H. P. M. Beames and on completion of his training entered the drawing office; from 1924 to 1928 he was Experimental Engineer at Crewe. Following a period with William Beardmore & Company as representative in India, Burma, Ceylon, and the Far East, he joined the Bengal Nagpur Railway at the end of 1929 and became Fuel Officer. After holding various district appointments, he acted as Superintendent, Running, for three months from April, 1942, and was confirmed in that post in November of the same year. He was appointed Chief Mechanical Engineer in 1945 and was transferred to the Railway Board as Director, Mechanical Engineering, in 1947. On return from leave in March, 1949, he was posted as Chief Mechanical Engineer on loan to the Madras & Southern Mahratta Railway, which, since April 14, 1951, has been part of the Southern Railway. Mr. Oldfield was commissioned to the Gordon Highlanders in 1919 and after joining the Cheshire Regiment in 1923, was transferred to the Corps of the Royal Engineers (Transportation) in 1925 and was promoted Captain. On going to India in 1928 he was posted to the Regular Army Reserve of Officers and placed on the retirement list in 1947. He held the rank of Major in the Defence of India Corps during the second World war and also served in the Auxiliary Force, India, as Major and Second in Command of the Bengal Nagpur Railway Battalion, until it was dissolved after the establishment of the Republic.

XUM



Mr. C. R. L. Rice

Appointed District Motive Power Superintendent, Wolverhampton, Western Region

Mr. G. J. Shepherd

Appointed Chief of Police, Scottish Area, British Transport Commission

Mr. R. D. Kerr

Assistant Marine Superintendent, Scottish Region, who has retired

Mr. C. R. L. Rice, District Motive Power Superintendent, Old Oak Common, Western Region, who, as recorded in our June 1 issue, has been appointed District Motive Power Superintendent, Wolverhampton, started his railway career with the L.M.S.R. at Horwich, and in 1930 took charge of the Motive Power Depot at Stratford-on-Avon. Two years later he moved to Carlton in a similar capacity and in 1934 became Head Office Inspector at Derby. He was promoted Assistant Locomotive Superintendent at Saltley in 1938, and remained in this post until 1943, when he was transferred to Manchester. Three years later Mr. Rice was appointed District Locomotive Superintendent at Willesden (London) Depot and in 1950 transferred to the Western Region at Old Oak Common.

Mr. R. K. Innes, Chief Mechanical Engineer, Bombay, Baroda & Central India Railway, is at present in the United Kingdom on leave.

The Western Region has announced the appointment of Mr. A. Shoemack, Assistant District Goods Superintendent, Paddington, as Assistant to the Commercial Superintendent, Paddington.

Mr. F. A. Howard, formerly an Inspecting Engineer with the Egyptian Railways, has joined Messrs. Rendel, Palmer & Tritton, Consulting Engineers, as an Inspecting Engineer.

Mr. John H. Lord, an Executive Director of the Dunlop Rubber Co. Ltd., has been elected President of the Federation of British Rubber Manufacturers' Associations.

Following the merging of the export traffic section of the Sales Department, American Car & Foundry Company, with the General Traffic Department, Mr. S. F. McDermott will continue in charge of export traffic and in addition has been appointed Assistant to Traffic Manager.

The Minister of Transport has appointed Mr. Maurice H. Pugh to be Chairman of the Transport Users Consultative Committee for the South East Area. Mr. Pugh is a Senior Partner in a firm of solicitors a former Mayor of Southampton, and a member of the central governing body of the Association of British Chambers of Commerce.

Mr. G. J. Shepherd, Chief of Police, Eastern Area, British Transport Commission, who, as recorded in our May 11 issue, has been appointed Chief of Police, Scottish Area, joined the Great Northern Railway in 1911 and spent his early career in the Commercial and Operating Departments. After service in the Army through the first World war, when he attained the rank of Captain, he returned to the Passenger Manager's Department, and remained there until he was called to military service again in 1939. He was awarded the M.B.E. for services in Persia and Iraq and the O.B.E. for services in North-West Europe, and retired with the rank of Lt.-Colonel. Mr. Shepherd was appointed Assistant Chief of Police (Southern Area), L.N.E.R., in April, 1946, and Chief of Police, Eastern Area, British Transport Commission, in April, 1949.

Eastern Region Appointments

British Railways, Eastern Region, has announced the following appointments:—

Mr. F. G. Crabb, Assistant to Commercial Superintendent (Rates & Charges—Goods), to be Assistant to Commercial Superintendent (Freight Rates & Charges).

Mr. R. L. Vereker, District Motive Power Superintendent, Ardsley, Leeds, to be District Motive Power Superintendent, Norwich.

Mr. H. C. Grayston, Chief of Car Service, Canadian National Railways, who, as recorded in our May 18 issue, has been appointed Manager of the Newfoundland District, was born in Wimbledon, London, in 1901. He joined a constituent of the C.N.R. 35 years ago as a clerk in the Comptroller's Department at Toronto, and following promotion to various positions in the Departments of the Vice-Presidents of Finance and Construction, went to Montreal in 1923 as Secretary to the Chief Engineer of Construction. He was made Chief Car Distributor in the Transportation Department in 1928, became General Supervisor of Car Service in 1939, and Chief of Car Service in 1948.

Mr. R. D. Kerr, Assistant Marine Superintendent, Scottish Region, British Railways, who, as recorded in our June 1 issue, has retired, joined the service of the Caledonian Railway in 1906 and in 1913 was appointed to the Office of the Superintendent of the Line, Glasgow. On the formation of the Passenger Commercial Superintendent's Department, L.M.S.R., he became Clerk-in-Charge of the Scottish Rates & Fares Department, and in 1933 was appointed Rates & Fares Assistant (Passenger) to the Commercial Manager. For many years Mr. Kerr was Scottish Representative of the Caledonian Railway (later L.M.S.R.) on the Passenger Rates & Fares Conference and other committees at the Railway Clearing House, London. In 1934 he was Chairman of the Passenger Train Rates & Fares Conference. He was appointed Assistant (Passenger) Commercial Manager, Glasgow, in 1937; District Goods & Passenger Manager, Edinburgh, in 1944, and two years later became Steamship Superintendent (Scotland), L.M.S.R., and Manager of the Caledonian Steam Packet Co. Ltd., Gourock. On nationalisation, Mr. Kerr was appointed as Assistant Marine Superintendent, Scottish Region, British Railways.

Institute of Transport

The election of Mr. A. B. B. Valentine, Member, London Transport Executive, to take office as President of the Institute of Transport on October 1, was announced in our May 25 issue. The other officers elected for the year 1951-52 are as follows:—

Vice-Presidents: Messrs. F. D. Arney, General Manager, Port of Bristol Authority; J. W. S. Brancker, General Manager (International Affairs), B.O.A.C.; C. T. Brunner, Director & Joint General Manager, Shell-Mex & B.P. Limited; S. Kennedy, Chairman, Tilling Group Management Board, Part-time Member of the Road Passenger Executive; H. A. Short, Chief Regional Officer, North Eastern Region, British Railways; P. J. R. Tapp, Chairman, Meat Transport Organisation Limited, Part-time Member of the Road Haulage Executive. Honorary Treasurer: Mr. A. L. Castleman, formerly District Goods Mana-

ger, L.M.S.R. (Broad Street). Honorary Librarian: Mr. A. B. MacLeod, Stores Superintendent, London Midland Region, British Railways.

Past-Presidents to serve on the Council: Sir Frederick Handley Page, Mr. D. R. Lamb, Brigadier-General Sir H. Osborne Mance, Messrs. R. Stuart Pilcher, T. W. Royle, J. S. Wills.

The undernamed Ordinary Members of Council will retire at September 30: —

Nine Members: Mr. W. Armstrong, Sir Alan Cobham, Messrs. R. G. Grout, R. H. Hacker, R. G. James, A. G. Marsden, D. Murray, G. F. Sinclair, P. J. R. Tapp. One Associate Member: Mr. E. Havers.

To fill the vacancies created by the foregoing retirements, the Council has nominated the undermentioned nine Members and one Associate Member: —

Messrs. Miles Beevor, Chief Secretary, British Transport Commission; Arthur Earle Edwards, District Traffic Superintendent, London East District, Southern Region, British Railways; Keith Granville, Sales Director, British Overseas Airways Corporation; Maurice Frederick Horner, District Manager, Road Haulage Executive; Peter Gordon Masefield, Chief Executive, British European Airways Corporation; Arthur Charles Baden Pickford, Executive Officer (Terminals), Railway Executive; Henry George Noel Read, Assistant Commercial Superintendent, London Midland Region, British Railways; Wilfred Harry Smith, General Manager, Birmingham City Transport; Edwin Leslie Taylor, Managing Director, Sheffield United Tours Limited, and Hebble Motor Services Limited, and Director of other omnibus undertakings associated with the British Electric Traction Co. Ltd. Leslie Alan Dennis (*Associate Member*), Accountant's Office, Audit Department, Continental Division, Southern Region, British Railways.

Institution of Civil Engineers

The Council of the Institution of Civil Engineers for the session 1950-51 is composed as follows:—

President: Mr. A. S. Quartermaine.

Vice-Presidents:—Messrs. H. F. Cronin, W. P. Shepherd-Barron, D. M. Watson, W. K. Wallace.

Members of Council: Sir Stanley Angwin; Sir Donald Bailey; Professor J. F. Baker; Messrs. J. A. Banks (Glasgow & West of Scotland); George Baxter; G. T. Bennett; H. E. Campbell (Northern Ireland); C. L. Champion; J. T. Chester (Colonies); James Cross (Ceylon); A. C. Dean (North Western); R. H. Edwards (South Wales & Monmouthshire); Professor R. H. Evans (Yorkshire); Messrs. E. L. Everatt (Pakistan); Arthur Floyd; Ralph Freeman; H. J. F. Gourley; R. R. W. Grigson; W. P. Haldane (Edinburgh & East of Scotland); H. J. B. Harding; T. H. Hogg (Canada); A. C. Hughes (Southern); Sir Claude Inglis; Messrs. E. R. McKillop (New Zealand); G. M. McNaughton; H. J. B. Manzoni; G. G. Marsland (South Western); R. W. Mountain; Professor A. J. S. Pippard; Messrs. Joseph Rawlinson; C. L. Robertson (N. & S. Rhodesia); A. W. Skempton; Professor W. G. Sutton (South Africa); Messrs. J. C. L. Train; W. H. S. Tripp (Northern Counties); T. H. Upton (Australia); F. C. Vokes (Midlands); Sir Hubert Edmund Walker (Colonies); Mr. J. P. Watson; Sir Arthur Whitaker; Major-General Harold Williams (India); Messrs. Guthlac Wilson; R. M. Wynne-Edwards.

Four Past-Presidents are to be elected in November next.

The King's Birthday Honours List

The following is a selection of honours of transport and industrial interest from the King's Birthday list: —

Privy Counsellors

Mr. David Rhys Grenfell, C.B.E., J.P., Member of Parliament for the Gower Division of Glamorganshire since 1922; Secretary for Mines, 1940-42; for political & public services. He was also Chairman of the Welsh Tourist & Holiday Board until last year.

Knights Bachelor

Mr. David Anderson, LL.D., M.I.C.E., Senior Partner, Messrs. Mott, Hay & Anderson.

Mr. Roger Duncalfe, Chairman, British Standards Institution.

Mr. Bernard Guy Harrison, Chairman, Harrison & Sons Ltd.; Member of Council, London Master Printers' Association.

Mr. Reginald John Hodges, General Manager & Secretary, Mersey Docks & Harbour Board.

Mr. Henry William Hugh Warren, D.Sc., M.I.E.E., M.I.Mech.E., Managing Director, Associated Electrical Industries Limited.

Mr. Lionel Harold Harvey Lowe, F.C.A., Member of the National Coal Board.

Mr. James Reid Young, Director, Vickers Limited, and Vickers-Armstrongs Limited.

K.C.B.

Sir Edwin Plowden, K.B.E., Chief Planning Officer, H.M. Treasury. He is also a Director of the British Aluminium Co. Ltd.

C.V.O.

Mr. James William Watkins, D.S.O., M.C., Chief Regional Officer, London Midland Region, British Railways.

D.B.E.

Miss Florence May Hancock, C.B.E., National Woman Officer, Transport & General Workers' Union.

K.B.E.

Sir Frederick William Leggett, C.B., for services relating to the conditions of industrial employment.

C.B.E.

Mr. James Alexander, General Manager & Secretary, Belfast Harbour Commissioners.

Mr. Andrew Black, Director of Acquisitions, British Transport Commission.

Mr. William Kenneth Brasher, M.I.E.E., Secretary, Institution of Electrical Engineers.

Mr. George Foster Earle, Chairman & a Managing Director, Associated Portland Cement Manufacturers Limited.

Mr. Frank Sandford Eastwood, Chairman of the Licensing Authorities for Public Service & Goods Vehicles, Yorkshire Area, Ministry of Transport.

Mr. Hubert Oscar Roberts, Ministry of Transport Freight Market Representative.

Mr. George Wood, Chairman, Thos. W. Ward Limited.

Mr. John Wilson Elliott, Chairman, Swan, Hunter & Wigham Richardson Limited.

Mr. William Edward Willoughby Petter, F.R.Ae.S., Deputy Managing Director, Folland Aircraft Limited; formerly Chief Engineer, the English Electric Co. Ltd.

O.B.E.

Mr. Harry Orlando Missenden, General Manager, Birmingham, British Industries Fair.

We regret to record the death on June 3 of Mr. H. C. Norbury, Chief Accounts Officer, Great Indian Peninsula Railway, from 1930 to 1938.

Admiral Lord Mountevans has accepted the office of Chairman of Parsons Engineering Co. Ltd.

Stabilisers for British Railways Mailboats

As was reported in our May 11 issue, the London Midland Region of British Railways is fitting its Irish Mail vessels *Cambria* and *Hibernia* with hydrofin automatic stabilisers to minimise rolling in a seaway. This equipment is placed in a watertight compartment forward of the engine room and beneath the fuel-oil tanks.

The stabilisers consist of two retractable and rotatable fins arranged in an approximately horizontal plane near the bilge at each side of the ship, and to restrict the dimensions of the fins there is also a section incorporating a tail flap. The angular movement of the latter is in the same direction as that of the main portion of fin, but, because it is of greater magnitude, produces a force claimed to be equal to that of a plain fin of double the area.

Each fin is mounted in such a way that in the initial position hydrodynamic balance is achieved and consequently the torque necessary to produce angular movement of the fin in the extended position is small. In operation each fin is tilted from the zero position, first in one direction and then in the other, the movement of the port and starboard assemblies being controlled so that their angular displacements are equal and opposite. Due to the forward motion of the ship, the water must exert an upward force on one fin and a downward force on the other, the result being the formation of a couple which counteracts the action of the wave.

The orientation of the fins is controlled by gyroscopic equipment which actually anticipates the heeling action of the wave. Rapid reversal of the fin angle is necessary at the commencement of each roll to secure the maximum righting moment on the hull, and reversal is, indeed, arranged to take place in about 1½ sec., during which time the main fins may be rotated through a maximum angle of 40 deg.

When not in commission the fins can be drawn into recesses in the hull. When the equipment is in operation it is controlled by two small gyroscopes; one measures the angle and the other the velocity of the roll. The algebraic sum of the movements of these gyroscopes is used to actuate electrical and hydraulic relays which govern the angle through which the fins are moved.

The pressure fluid for angling the fins and operating the hydraulic relays, and also for extending and retracting the fins, is by V.S.G. variable-delivery pumps driven by electric motors. Even if the power supply to the motors should fail, which would leave the fins temporarily at their maximum angle of tilt, only a slight steady list would be imposed on the ship.

The firm of Brown Bros. & Co. Ltd. original patentees of the stabiliser, were responsible for the design, manufacture, and supervision of the installation in these ships, while William Denny & Bros. Ltd. were responsible for the hydrodynamic design of the fin, and Muirhead & Co. Ltd. supplied under licence the gyro control gear. Harland & Wolff Limited fitted the stabilisers.

Progress in Nationalised Transport

Lord Hurcomb on B.T.C. achievements since nationalisation; the role of the staff in joint consultation

Undue political interference in nationalised transport was referred to by Lord Hurcomb, Chairman of the British Transport Commission, in his address to the annual conference of the Transport Salaried Staffs' Association at Cliftonville on May 30. Taking transport out of politics, he said, did not mean that conduct of any national undertaking should be removed from the ultimate review of Parliament, or that free discussion should be avoided if based on facts and directed to major issues; in 1950, however, Parliament debated nationalised transport ten times, and 77 Parliamentary questions were answered on matters concerning some part of the B.T.C. undertaking. Transport however should be taken out of politics in the sense that the principles of the Transport Act should cease to be a matter of acute political controversy. If the policy of transport integration were to prevail, and they were not to revert in an intenser form to the competition which led to so much difficulty before the war, every individual and every staff organisation must show their faith in that greater aim and do all they could to promote it. The Commission earnestly wished to enlist the full experience and assistance of its staffs. The local implications of many of major problems therefore were discussed with the staff through the joint consultative machinery.

Joint Consultation

From the outset in 1948, continued Lord Hurcomb, the B.T.C. and its Executives had given much thought to this machinery, and as a result of discussions between the Railway Executive, the T.S.S.A., the N.U.R., the A.S.L.E.F., and the unions constituting the staff side of the Railway Shopmen's National Council, it was agreed to introduce new consultation procedure on matters of general, departmental, or local policy not within the realm of negotiation. Yet this procedure would not serve its purpose unless the spirit in each committee was the right one. In many cases a new outlook towards consultation from both sides was required. Management representatives must be ready to give prior indication of contemplated lines of action and to arrange for staff representations to be given due weight; they should give an intelligible reason for rejecting proposals from the men's side, and not be too long in giving an answer, whether favourable or not. The men's representatives ought not to use consultation to bargain for ulterior ends; nor should reluctance be shown to reach a conclusion except on condition that some other point (the subject of negotiation) was settled first. Reasonable speed was necessary so as not to delay the whole process of reorganisation. Joint consultation morever, did not mean that before action was taken both sides had to reach complete agreement in all cases on matters for which the management was responsible. The unions, perhaps, should give clearer advice on the need for staff representatives to face changes and to examine proposals on their merits.

There had already been great progress in making consultation a reality; the new machinery had only been in operation for a year. Greater experience however was needed, particularly at the lower levels. Everything possible should be done to impress staffs with the need for increasing the contribution which joint consultative machinery can make to efficiency. Lord Hurcomb went on to stress the need for further education of the rank and file of union members in this matter, in which the union journals could help; the T.S.S.A. official journal had already done much. The Commission would do all it could to ensure the right spirit on the management side.

There were criticisms that nationalisation had made no radical change in organisation, whilst other people said that everything would be splendid in transport if there had been no changes at all. On the physical side especially time and much preliminary expenditure were needed to bring about fundamental changes and demonstrate the benefits of unification. Three years was much too short a time for full results, but many things had been done which would increasingly lead to greater technical efficiency and financial economies.

Increased Efficiency of British Railways

The railways, said Lord Hurcomb, were constantly being exhorted to achieve "greater efficiency." Although there was no satisfactory single measure of productivity for all kinds of industrial activity, the long-established statistical measures of railway efficiency had shown steady improvement in the amount of work done. Net ton-miles per total engine-hour, the best available such measure, were in 1938, 461; in 1948, 542; and in 1950, 578; an improvement of 6·6 per cent. over the last two years, and 25·4 per cent. compared with pre-war. All the principal indices of railway efficiency had improved since vesting day, without the heavy capital expenditure allowed to many other industries.

After pointing out the relatively small economies derived from closing branch lines, he said that British Railways' basic problem lay in the difficulty in making those quick alterations in their charges which were possible in other trades. Whilst increases in their costs (such as fuel and wages) often were sudden, the process of raising their charges to meet it was lengthy. Where a wages settlement was retrospective, the interval would be even longer; it was never possible to increase charges with retroactive effect, which was the principal cause of their deficits. In ordinary business practice, temporary losses would be financed out of reserves until costs could be adjusted and a balance restored, and reserves thereafter be replenished out of higher net revenue accruing. The Commission however started its existence without any such reserve, and so far had not secured any margin in rates out of which to build up the essential reserve fund. The prolonged preparatory work, culminating in something like litigation, meant that in a period of rising costs, the Commission's undertaking without such a margin had to be chronically in deficit.

After referring to the adverse effect on the morale of the staff of the B.T.C. and its Executives of constant public disparagement, Lord Hurcomb stated that operating costs would be a serious problem for a long time, partly because they had gone so far ahead of the level of charges, and partly because there were no signs of their continued rise being checked; but their effect would have been greater if substantial economies had not been obtained. With some curtailment of those "marginal" services which were quite unprofitable (and which no private business would try to undertake) they would continue to operate all the transport services on which trade, industry, and the travelling public depended, and at prices which (though subject to adjustment at different times like any other service or commodity) would continue to compare favourably with the cost of other things. The B.T.C. was bound to pay its way, and they would do nothing to lose traffic to the undertaking in such wise as to reduce net revenue. Their present charges were reasonable and facilities on the whole were good.

The accumulated deficit of £39 million to the end of 1950 was less than 3 per cent. of the gross turnover in the three years over which it occurred. The B.T.C. was now in command of such widespread resources, and for the first time in this country reaching a position in which those resources can be used to the best advantage, that there was no longer any reason why this deficit should continue indefinitely provided that traders and travellers paid a fair price for services given. There was force in the argument that if transport incurred a deficit by having to provide services at less than cost, it was subsidising transport users. He himself, said Lord Hurcomb, would be sorry if transport came to be subsidised; a subsidised service would not have the stimulus of having to pay its way, and there would be undesirable interferences with management by the subsidising authority.

Future Policy

In the belief that in the conditions he had outlined the Commission could balance its accounts, they were carrying on with the improvement of services, and within the limits of capital expenditure imposed by the national plan, they were continuing to modernise stations and depots, build new rolling stock, and gradually make up the arrears they had inherited. They were not economising at the expense of essential transport services. They were prepared to re-cast their organisation where necessary, to explore in consultation with the staff every means of improving efficiency, and to keep their minds alert to fundamental changes.

Now more than ever was the time for those employed in nationalised transport to demonstrate by effective work that they could shift the traffic, of which there was a great deal waiting to be moved. Constant interruptions of service, however spasmodic or local and whatever the cause, had seriously damaged and were seriously damaging the Commission's finances, its goodwill, and public confidence. Their claim that in relation to their costs their charges were reasonable could only be justified so long as they did not think that increases in costs could be automatically passed on to the public without strenuous efforts to economise. It did not help if transport workers themselves as units or as members of some organisation objected to fare increases which were partly required to meet the cost of improvements in their own position. They should be able to rely on their own people to see that their case was properly explained and fully understood by all concerned.

Indian State Railways Dinner

Mr. W. G. W. Reid and Mr. W. A. Hewitt describe some recent developments in India and Pakistan

The annual dinner and tea party of the Indian State Railways (India and Pakistan) took place on May 28 at the Rembrandt Hotel, London, S.W.7. Sir Leonard Wilson, a former Chief Commissioner of Railways, took the chair at the dinner.

The following officers of the various railways were present:—

Bengal & Assam and Oudh & Tirhut Railways: Messrs. J. H. Bavin, G. S. Bocquet, N. D. Calder, D. Cardew, W. D. Craig, H. D. Creedy, J. V. Elson, C. H. Griffiths, P. L. J. Hands, J. Hannah, Colonel Sir Gordon Hearn, Messrs. W. A. Hewitt, H. A. Josselyne, K. E. Leaver, L. V. Pont, H. M. Read, R. D. B. Robathan, G. A. Rowlerson, F. E. Sheppard, F. A. Smith, S. Taylor, W. A. H. Watts, and F. C. West.

Bombay, Baroda & Central India Railway: Messrs. E. C. Armitage, J. S. Bearcroft, R. W. F. Butterfield, P. S. Clarke, R. T. Collins, C. G. Cotesworth, H. R. Eveleigh, K. T. Lomas, W. R. Maunder, B. H. Mayes, P. D. Mitton, W. J. A. Moore, W. R. S. Morley, W. E. Napper, H. J. Nichols, A. B. Rogers, and G. T. Simpson.

Bengal-Nagpur Railway: Messrs. A. C. Austin, S. J. P. Cambridge, N. H. Cour-Palais, Y. A. de la Nougerede, P. F. Dennison, G. S. Higginson, W. G. Hornett, P. R. Leigh Bennett, J. A. Parker, J. A. A. Shea, H. F. Simpson, S. Tabraham, and G. Tait.

East Indian Railway: Messrs. H. J. Allinson, K. Bathgate, C. S. Buike, C. N. Burns, A. J. Doran, M. P. Fleming, J. C. Gibson, J. R. Hemsley, C. G. B. Hinchley, T. T. Lambe, Sir Robert Marriott, Messrs. F. G. S. Martin, R. S. Oakley, G. W. N. Rose, and G. A. R. Trimming.

Great Indian Peninsular Railway: Messrs. A. E. Aylot, S. Barber, H. H. C. Marton, D. S. Burn, J. Clegg, C. H. Cock, Lt.-Colonel E. Colvin, Messrs. J. N. Compton, H. E. Cox, Sir George Cuffe, Colonel R. B. Emerson, Messrs. E. L. Ensor, A. J. Frazer, A. G. T. Glaisby, C. E. Hall, R. J. Harris, T. Hill, W. Hood, L. A. Hoyle, J. E. Jack, J. B. Remington, F. L. Round, C. I. Routh, D. Scott Scott, E. C. B. Thornton, J. T. Wheatley, and Sir Leonard Wilson.

Madras & Southern Mahratta Railway: Sir Godfrey Armstrong, Messrs. W. O. Browne, H. G. Carpenter, N. Carroll, V. J. Crow, A. M. Dent, W. De Bruyn, H. E. Edwards, R. de K. Maynard, G. W. Molle, W. G. W. Reid, B. A. Spencer, B. J. Tapner, D. O. Thomas, A. G. Turner, and —, Wheatley.

North Western Railway: Messrs. W. A. Anderson, E. H. Annett, V. H. Boalth, F. S. Bond, A. C. Brabson, R. N. Chrestien, F. A. Coello, B. C. Drummond, G. A. Dyke, G. J. Eades, W. T. Everall, T. C. R. Eagan, L. Flatt, W. E. Gelson, E. P. Gildea, C. E. Goldsmith, H. D. Green, M. S. Gregory, J. C. Highet, H. Hinton Cooper, H. W. Huggins, T. H. B. Jones, J. G. Keith-Hitchens, J. Mackinnon, Colonel D. McMullen, Messrs. E. L. Manico, B. Moody, J. W. Ogle, R. P. Parker, R. H. Paterson, A. A. Phillips, G. A. Plank, H. W. Puttick, W. C. Rodgers, J. Scruby, A. Sims, W. Strang, E. B. N. Taylor, R. O. C. Thomson, J. S. Tritton, A. E. Welby, F. M. G. Wheeler, Brigadier H. L. Woodhouse, Messrs. J. M. D. Wrench, J. Wyse, and W. H. H. Young.

South Indian Railway: Messrs. C. E. Gayes, H. C. Hodgson, J. Hutcheson, E. C. Lightbody, Colonel L. S. Sanson, Messrs. W. F. Sargisson, H. E. Thompson F. C. Wilson, and J. F. Wright.

Sir Leonard Wilson said that there were 171 officers present at the dinner, and he then introduced the two speakers who had consented to give the latest information about the railways in India and Pakistan, namely, Mr. W. G. W. Reid, General Manager of the Madras & Southern Mahratta Railway, and Mr. W. A. Hewitt, General Manager, North Western Railway. He also paid a tribute once more to Mr. N. Calder for his work in organising the reunion.

Regrouping of Indian Railways

Mr. Reid prefaced his remarks by saying that the most important topic in India today was the amalgamation and regrouping of all the railways. In the amalgamation of the Madras & Southern Mahratta, South Indian, and Mysore railways in April, to form the new Southern Railway, some difficulty had been experienced in finding a chain of responsibility for the new regions comprising that system. Eventually, it had been decided to place three deputy heads of departments in charge of each region, with the transportation officer as the keyman entitled to demand from the other departments co-operation to ensure the smooth running of the region. This was considered by Mr. Reid to be the right policy.

Continuing, he emphasised that India had done a very good job since Partition, and great difficulties had been successfully overcome. Everywhere, maximum co-operation had been obtained, and the railways were rapidly going ahead. Mr. Reid referred briefly to the new rates and fares structure, and said that Indian railways were as good as those in any other country. Turning to present-day living conditions in India, he mentioned that there were now more Europeans in Madras than before the war, and said that, on the whole, conditions in India were little different.

Railway Problems in Pakistan

Speaking of the Pakistan railways, Mr. Hewitt said that the North Western system, as most of them knew it, had lost just over 1,850 route-miles to India, but as 320 miles of the Hyderabad-Jodhpur metre-gauge line in Sind had been added to the N.W.R., its route-mileage was now 5,363; it was, therefore, still the longest railway in the sub-continent. He referred them to the annual issues of "Overseas Railways" published by *The Railway Gazette*, for details of the vicissitudes and difficulties faced by this railway following Partition, but explained that, after the departure of most British officers, 66 per cent. of the remaining officers elected to leave the N.W.R.

Coal, previously received freely and almost entirely from India, was no longer available, and instead, foreign coal had to be purchased abroad at very high prices. Large-scale conversion of steam locomotives to burn oil also relieved the situation. At the time of Partition the N.W.R. had 130 oil-burning engines, whereas today it had 520, and this total is expected to reach 600. The conversion of the locomotives was not difficult, but it was the provision of storage facilities at the various depots and tank wagons for the transport of fuel oil that was the main problem.

Necessity compelled them to fall back on their own resources, and manufacture items never before attempted, besides taking other steps to meet the situation. The N.W.R. took over the Steel & General Mills at Moghalpura, near its own workshops, and was running them as part of the railway. As the old Dhilwan sleeper creosoting depot was now in India, a new plant was constructed at Haripur Bund; a firebrick factory was also established at Malakwal to meet the increased demand resulting from conversion to oil burning.

Since conditions in Pakistan began to be stabilised early in 1949, development of the country had accelerated, and there had been a marked increase in the volume of traffic. In 1950-51, N.W.R. earnings were a little over Rs. 27 crores, far the largest figure ever attained, and higher even than in any year of the former undivided N.W.R. It had been achieved with an increase of only 37 per cent. over pre-war rates and fares, and in spite of greatly increased costs of fuel, stores, and wages, the latter dating back from Pakistan Pay Commission award of January, 1949. In 1949-50 the operating ratio was only 72 per cent., and even with increased working expenses, and a heavy track-renewals programme, it would, Mr. Hewitt felt convinced, not exceed 80 per cent. in 1950-51.

The increase in traffic was, he pointed out, entirely local as all regular through inter-Dominion passenger train services had ceased at Partition and not been resumed. To give some idea of the corresponding goods traffic, it was only necessary to state that over the previously busy Lahore-Amritsar line, it had rarely exceeded one trainload a day, and was frequently less. Between Macleodgunj Road and Bhatinda traffic had dwindled to one trainload a week or ten days, and all other routes were closed.

Pakistan Diesel Programme

Mr. Hewitt then made the important announcement that it had been decided to order no more steam locomotives for the N.W.R. Instead, a five-year programme gradually introducing the diesel-electric locomotive had been drawn up, and fourteen 1,500-h.p. twin units were due to arrive in Pakistan during the current year. These would be used initially on Lahore-Karachi mails and expresses; it was hoped that when track improvements were complete, 70 m.p.h. speeds would be permitted and that the overall time between these cities would be 17 hr. A further 23 diesel-electric locomotives, chiefly for goods traffic, were also on order and due for delivery in June, 1952.

Another important decision was to cease building any more conventional type coaching stock and to order lightweight steel coaches instead. An order had been placed in France for 122 of these vehicles, including first class air-conditioned carriages and dining cars. This number was sufficient to provide entirely new rakes for all mails and expresses running between Peshawar and Karachi *via* Lahore.

Mr. Hewitt, continuing, said that the former N.W.R., despite the setback it received during the early days of Pakistan's existence, had recovered its old stature, and was very much a live organisation again. A great future lay before it. Khan F. M. Khan, the present Director-General of Pakistan Railways, was largely responsible for bringing N.W.R. safely through difficult times.

XUM

Permanent Way Institution

Record attendance at the annual summer convention held in Holland

The annual summer convention of the Permanent Way Institution was held at The Hague from May 18-23, under the presidency of Lt.-Colonel H. B. Everard, Chief Officer, Engineering (Maintenance), Railway Executive, supported by Mr. J. C. L. Train and Mr. J. Taylor Thompson, past-Presidents.

When it was suggested that the 1951 meeting should be held in Holland, approach was made to Mr. F. Q. den Hollander, President, Netherlands Railways, who welcomed the proposal and gave every possible assistance to make the convention a success. Some 380 members inspected railway and civil engineering works in the Netherlands.

The party travelled from Harwich to the Hook of Holland on the nights of May 16 and 17 and on arrival were entertained to breakfast at the station. Mr. J. L. A. Cuperus, Chief Engineer, Netherlands Railways, welcomed the visitors, and thanks were returned by the President.

Annual Summer Meeting

The first official business was the annual summer general meeting held on May 18. Lt.-Colonel Everard presided, and members from every section in Great Britain attended together with representatives from Nigeria, Rhodesia and the Sudan.

Mr. H. Janes, Hon. Secretary, read the report on the activities of the Institution during the past six months, which showed that, because of the state of the country, the Malaya section had been unable to arrange meetings, although the membership of that section was now 110. On March 16 a meeting was held at Salisbury, Southern Rhodesia, when it was unanimously agreed to form a Rhodesia Section. The project had the support of Sir Arthur Griffin, General Manager, and Mr. B. H. Johnson, Chief Engineer, Rhodesia Railways.

During the half-year 302 additional members were enrolled, the number being made up of 19 fellows, 34 associate fellows, 45 members, 200 associate members, and four students. During the same period there were 54 transfers to higher grade of membership.

Mr. F. Lawson, Hon. Treasurer, in presenting the statement of accounts for the year 1950, said that the revenue account showed an excess of income over expenditure of £269, as compared with £163 in 1949. This confirmed that the policy of slightly increasing some subscription rates agreed two years ago was correct. Thanks were accorded to the auditors, Mr. Hector Hall and Mr. L. T. Starks, for their work during the past year.

The recommendation that the 1952 summer meeting to be held in East Anglia with headquarters at Ipswich was confirmed.

After the routine business had been dealt with, Mr. J. L. A. Cuperus, Chief Civil Engineer, Netherlands Railways, read a paper dealing with civil engineering works on the Netherlands Railways after the war. He gave a detailed account of the restoration work carried out.

Mr. J. I. Campbell, Civil Engineer, Eastern Region, British Railways, thanked Mr. Cuperus for his interesting account, and remarked that Mr. Cuperus had paid them the compliment of addressing them in their own language. September, 1944, had been mentioned as the date when everyone on the Netherlands Railways had walked off, and that was bravery of the highest degree.

The annual summer dinner was held later in the Kursaal, Scheveningen, when a record number of 525 were present. Lt.-Colonel H. B. Everard was in the chair, and among the guests were the British Ambassador, Sir Philip B. B. Nichols, and Messrs. D. G. W. Spitzen, L. J. M. Feber, F. Q. den Hollander, D. J. Wansink, J. L. A. Cuperus, H. van Galen Last, K. H. C. W. van der Veen, and T. W. Mundt.

Mr. J. C. L. Train, immediate past-President, proposing the toast of "The City of The Hague," said that the association between Great Britain and The Hague had been close for many years.

Mr. L. J. M. Feber, Deputy Burgomaster of The Hague, replying, said that the municipality was honoured that the Permanent Way Institution should choose The Hague for its first Continental meeting since the war. The railways held a very important place in the Netherlands and it would be interesting for them to see the reconstruction works carried out.

Mr. F. Q. den Hollander, proposing the toast of "The Permanent Way Institution," remarked that over 100 years ago railways came to the Netherlands from Great Britain, and he believed that since then the ties between British and Netherlands railwaymen had grown stronger and stronger.

The President, responding, voiced the thanks of all members of the party for the cordial welcome they had received. At a meeting of the council in April it was unanimously agreed that honorary life membership of the Institution be conferred on Mr. F. Q. den Hollander, and he had great pleasure in handing him a parchment certificate of his election to fellowship. Also, they had received much assistance from Mr. J. L. A. Cuperus, and he had pleasure in handing him—already a fellow—a presentation copy of the Institution publication "British Railway Track."

They were greatly indebted to Mr. den Hollander and all the officials of the Netherlands Railways for the great trouble they had taken and for the manner in which the arrangements had been prepared.

The toast of "The Guests," coupled with the names of Mr. D. G. W. Spitzen, Secretary-General, Ministry of Transport & Public Works, and Sir Philip Nichols was proposed by Mr. J. Taylor Thompson.

Mr. Spitzen, replying, said that there were many ties between the British Empire and the Netherlands. During the dark years of 1940-45 they listened secretly and carefully to the voice of England which gave them courage and faith.

Sir Philip Nichols also thanked Mr. Taylor Thompson and the President for their remarks. He had been a guest of the Netherlands for three years and had never been in any country where he felt so much at home. It was the only country in Western Europe that made its railways pay.

Among those present at the dinner were:—

Messrs. G. D. S. Alley, R. W. Bailey, G. B. Barton, P. S. A. Berridge, W. H. Best, R. O. Brooks, J. I. Campbell, J. A. Carey, T. A. Carson, C. J. Chaplin, H. Clough, E. C. Cookson, W. D. Cooil, B. C. Drummond, F. G. Edwards, Lt.-Colonel R. H. Edwards, Messrs. J. Hyde flolliott, A. Forester Fielding, L. S. Furnivall, J. H. Glendenning, H. J. Green, L. E. Hawkins, A. C. Ireland, H. Janes, W. D. Johns, F. Knutt, H. G. Lakeman, E. T. Somerville Large, F. Lawson, H. V. G. Malings, J. Malkinson, R. C. Mosedale, B. R. O'Connell, H. Ormiston, A. Lloyd Owen, J. N. Peck, C. E. R. Sherrington, H. L. P. Smith, M. G. R. Smith, H. E. Thompson, A. Tims, J. A. R. Turner, K. B. Turner, and R. F. Wilson.

Programme of Visits

A programme of visits and inspections had been prepared by officials of the Netherlands Railways and trips to places of interest for the ladies were also arranged during the period of the convention. Some particulars of these outings were given in our May 11 issue.

Special trains, buses, and boats were provided, in addition to which hospitality in generous measure was offered on many occasions. Lady guides accompanied each bus, and illustrated pamphlets printed in English were provided.

On the evening of May 22 a reception was given at the Municipal Museum of The Hague by Mr. L. J. M. Feber, who on behalf of the municipality extended a cordial welcome to the members.

The President thanked Mr. Feber for his welcome and for the many kindnesses received from the Dutch people. Mr. J. A. Carey, Vice-President, seconded his remarks, after which the party visited the picture galleries.

On the last day of the convention Mr. F. Q. den Hollander gave a farewell party at which he expressed pleasure at the success of the convention and that the Institution had visited the Netherlands.

The President, thanking Mr. den Hollander for his kindness and hospitality and for the many concessions granted to the visitors, said that the convention had been a record one and would be long remembered by those who had taken part.

The vote of thanks was supported by Mr. J. C. L. Train and Mr. G. Miller, while on behalf of the ladies, Mrs. A. M. Plumer expressed thanks, and especially to the lady guides who had been so helpful throughout the week.

Staff & Labour Matters

Railway Clerks' Resolution on Wages

At the annual conference of the Transport Salaried Staff's Association at Margate during the week ended June 2, a resolution was carried by a substantial majority demanding increased rates of pay and improved conditions of service for railway salaried staff. The new demands are in the wages charter which the delegates decided should be presented in its entirety. The charter includes a reduced working week of 38 hr., improved holidays, sick pay, and other benefits in addition to the wages demands.

T.S.S.A. leaders appealed to delegates "not to tie the hands" of union negotiators by pressing for the implementation of the charter which has been held up for more than two years, but delegates decided by card vote that the charter demands must stand as a whole. It was contended that the 7½ per cent. increase in salaries under the recent wages settlement from January 1, 1951, had been more than offset by the rise in cost of living.

Mr. G. B. Thorneycroft, General Secretary, T.S.S.A., opposing the demand, said that efforts were being made to revive the joint committee of the three railway trade unions with a view to formulating a common wages policy. He said that joint discussions would determine the measure of any new claim to be made and decide the time when it should be presented.

Brush Electrical Engineering Co. Ltd.

Sir Ronald W. Matthews reports continued progress during the past year

The sixty-second annual general meeting of the Brush Electrical Engineering Co. Ltd. was held in London on June 5, Sir Ronald W. Matthews, Chairman of the company, presiding.

The following are extracts from his statement circulated with the report and accounts:—

I am pleased to be able to advise stockholders that the improvement shown in the past three years has continued. At the beginning of the year the major problem was that of maintaining sales at a high level when the post-war seller's market had come to an end and more normal trading conditions were returning. By the end of the year conditions were reversed under the impetus of rearmament and the problem was that of increasing manufacturing capacity to balance a strong order book.

The board has for some time felt that the name of the company, the Brush Electrical Engineering Co. Ltd., is now by no means descriptive of the wide range of the manufactures of the group. It is not, however, thought desirable at present to change the name of the parent company, but with a view to presenting to the world a more adequate picture of the group activities, it has been decided to use as a general description of the organisation the Brush Aboe group of companies.

The input of orders, both from the home market and from export, is extremely satisfactory. It is encouraging to see the network of agents increasing under the intensive efforts of the export companies. The recent influx of orders from overseas markets has proved the wisdom of pursuing a determined export sales policy.

The wide range of equipment manufactured has facilitated a considerable measure of rationalisation of production. The majority of the factories are equipped for the building of individual "made to measure" equipment, and it has, therefore, been convenient to concentrate certain small items suitable for line production methods. At the Loughborough factory non-electrical equipment, such as the Petter superscavenge engine and the small engine development section, are being diverted to other factories, to provide space for the heavy power station electrical equipment for which this factory is so well known.

Industrial relations continue to be satisfactory throughout the group and the established policy of keeping all employees fully informed on current developments through the channels of joint consultation at all levels has been continued.

We can, I feel, look back with considerable satisfaction on the success which has attended our efforts to expand our contribution to the country's overseas trade, particularly in hard currency markets. We have entered on the current year with a new obligation superimposed on the vital export position—the need to play our full part in meeting the requirements of the Government in connection with the rearmament programme. That we shall not fail in this double duty to the nation I am convinced, although we are fully conscious of the difficulties already arising from shortages of essential raw materials with their inevitable effect on output.

The report and accounts of the company were adopted.

North British Locomotive Co. Ltd.

The forty-eighth annual general meeting of the North British Locomotive Co. Ltd. was held in Glasgow on May 25. Mr. J. B. Mavor, Chairman of the company, presided.

Mr. Mavor, after dealing with the accounts for the year, which were referred to in our April 13 issue, said that trading during the past twelve months had been more difficult than anticipated, due to technical and other problems; nevertheless, a large number of locomotives had been delivered both at home and abroad and it was satisfactory to note the progress which had been made in furthering their policy of bringing the plant and buildings up to date, making use of all that was best in recent technical development.

Examples of this were the new mechanised iron foundry in which production was now starting, and the introduction of new heat treatment plant and other equipment, which were already showing gratifying economies.

After a lull in large-scale inquiries for locomotives, signs were again apparent of further big developments in transport needs abroad, and prospects of further orders were satisfactory despite increasing foreign competition. In this connection the Joint Managing Director, Mr. W. D. Lorimer, was at present engaged on an extensive tour which it was hoped would bring tangible results.

In addition to steam locomotive orders they had on hand orders for electric, diesel-electric, and diesel-hydraulic locomotives, the latter being as a result of the introduction of the North British-Voith range of standard locomotives. As the transmission was to be made within their own organisation it opened a promising field to the company.

In view of the severe and traditional fluctuation in locomotive demands, steps had been taken to increase the variety of their production, and they had this year executed considerable orders for machine tools. In addition they had received a very large order for the production under licence from America of excavators, work which was of high priority in national importance.

It was hoped that the actual trading profit for 1951 would show an improvement on the current figure. The raw material supply position remained, of course, very difficult, but great efforts were being made to overcome this.

The report and accounts were adopted.

Contracts & Tenders

The Argentine Executive Power has approved the orders placed by the Ministry of Transport with Werkspoor N.V., Amsterdam, for the purchase of railway rolling stock and equipment, valued at 200,000,000 Dutch florins. Further details of the contract were given in our April 6 issue.

Certain contracts placed by the Rhodesia Railways in recent months have been amended as follows:—

Metropolitan-Cammell Carriage & Wagon Co. Ltd.: order for 25 first class passenger carriages increased to 32.

Gloucester Railway Carriage & Wagon Co. Ltd.: order for 85 fourth class passenger carriages reduced to 73.

In connection with British Railways 1951 locomotive construction programme, a contract has been placed with British Timken Limited for tapered roller bearing axleboxes to be fitted on all engine and tender axles of the following locomotives: 25 Class "7" Pacifics, 10 Class "6" Pacifics, and 30 Class "5" 4-6-0s. The tenders of 20 Class "4" 4-6-0 locomotives also will be equipped with Timken bearings.

The first representatives of some of these classes are now in service equipped with roller bearings supplied under the contract, which comprises 325 cannon boxes, 580 single boxes, and 1,690 bearings.

Waggonfabrik Talbot, A.G., Aachen, is building the bodies and underframes for ten two-coach electric trains for the Hamburg Vorortbahn; each train will comprise a motor-coach and a driving trailer.

Maschinenfabrik Esslingen, A.G., is building a number of 200 b.h.p. diesel-hydraulic locomotives for industrial service in Brazil.

The Canadian National Railways have recently placed an order for 58 all-steel baggage cars with the National Steel Car Corporation Limited.

A.C.V. Sales Limited has recently received an order for 362 A.E.C. "Regal" Mark IV chassis for the London Transport Executive.

The Argentine Railways have placed an order with Les Petits-Fils de Francois de Wendel et Cie, Paris, for some 90,000 tons of rails, fishplates, and accessories. The inspection will be by Messrs. Fox & Mayo, Consulting Engineers.

The Special Register Information Service of the Board of Trade, Commercial Relations & Exports Department, has reported from the United Kingdom Trade Commissioner in Pakistan, that the Ministry of Communications (Railway Division), Government of Pakistan, has issued a call for tenders for the supply of 1,100 5-ft. 6-in. gauge dismantled covered goods wagons of "CR" type. The wagons are to be complete with underframe, vacuum brakes fittings, drawgear, buffing gear and painted, to P.R.S. specification No. R-6-49 and the particular specifications and drawings referred to therein. 1,000 of the wagons are to be delivered dismantled to E.B.R. F.O.R. Chittagong, and the remaining 100 are to be delivered dismantled to N.W.R. F.O.R. Karachi.

Copies of the tender documents and particular specifications can be obtained from the Office of the Director General of Railways, Railway Division, Ministry of Communications, on payments of Rs. 40 for each set. Tenders must reach the Office of the Director, Mechanical Engineering & Stores, Railway Division,

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Ministry of Communications, Government of Pakistan, Karachi, by 11 a.m. on July 16, 1951.

The Counsellor (Commercial), British Embassy, Athens, has reported a call for tenders (reference: CALL No. 21) by the Greek Ministry of Communications for the supply of certain special machines for the repair of diesel motors of railcar type Fiat "700" and Renault "ABJ4." Copies of tender documents, which include conditions of tender, specifications and illustrations, are obtainable from the S.E.K. Traction & Material Department, Ministry of Communications, Polytechniou 7, Athens. All tenders must be submitted by June 13. A copy of the tender documents has been received by the Commercial Relations & Exports Department of the Board of Trade, London, S.W.1, where it may be inspected by representatives of United Kingdom manufacturers.

SPANISH MAIN LINE TO BE DOUBLED.—It is reported from Madrid that tenders have been invited for the doubling of the last-remaining single-track section, between Alsasua and Miranda de Ebro, of the main line of the Spanish National Railways between Irun and Madrid.

ROAD FUND REPORT.—Payments from the Road Fund in 1949-50 for the maintenance, improvement, and construction of roads were nearly £26,000,000, as compared with £23,500,000 in the previous year. Of this total the amount paid out in respect of trunk roads was £9,215,000, an increase of £1,299,000 while maintenance and minor improvement of trunk roads cost £6,868,000 and improvement and new construction £1,963,000. Grants to highway authorities totalled £15,923,000 as compared with £14,804,000 in the previous twelve months. These figures are given in a report on the administration of the Road Fund, 1949-50, published by H.M. Stationery Office, price 2s.

The New "Golden Arrow"

(*Concluded from page* 640)

an electro-magnetic type operated by a switch from the kitchen.

The car exteriors are finished in the standard Pullman colours, cream and umber, and they will form a noteworthy addition to the Pullman fleet.

The following firms as sub-contractors supplied materials for the cars:—

Interior finish	Waring & Gillow Limited
Exterior paints	Docker Brothers
	Imperial Chemical Industries Limited
Train lighting	J. Stone & Co. (Deptford) Ltd.
Lighting fittings ...	Best & Lloyd Limited
Luminator lamps ...	Wilmot-Breeden Limited
Upholstery	John Holdsworth & Co. Ltd.
Carpets	James Templeton & Co. Ltd.
Formica table tops ...	Thos. De La Rue (Plastics) Limited
Plastic panels	Wareite Limited
Metal furniture ...	McGeoch & Co. Ltd.
	Jones & Foster Limited
	Player, Mitchell & Breeden
Locks	Resilence Lock & Manufacturing Co. Ltd.
Sliding ventilators ...	Henry Hope & Sons Ltd.
Public address system ...	Broadcast Amplifiers
Window glass	Pilkington Bros. Ltd.
Air extractor fans ...	Vent-Axia Limited
Terrazzo flooring ...	Scandolo Limited
Lavatory porcelain items	Shanks & Co. Ltd.
Brake equipment and steam heating	Westinghouse Brake & Signal Co. Ltd.
Metal spraying	Metallisation Limited
"Limpet" asbestos ...	J. W. Roberts Limited
Cooking stoves ...	Radiation (Large Cooking Equipment) Limited
Fuel system	Calor Gas (Distributing) Co. Ltd.

Notes and News

Road & Rail Appeal Tribunal: Change of Address.—The address of the Road & Rail Appeal Tribunal is now 6, Spring Gardens, London, S.W.1: telephone number Trafalgar 6782/3.

Engineers to Claim Wage Increases.—Claims for wage increases ranging from £2 a week to 6d. an hour will be on the agenda when the national executive of the Amalgamated Engineering Union meets in two weeks time.

Assistant Accountant Required.—Applications are invited for the post of assistant accountant, between 25 and 35 years of age, required by the Government of Malaya for the railway department, for one tour of three years with prospect of permanency. See Official Notices on page 655.

Canadian Pacific Earnings.—Net earnings of the Canadian Pacific Railway in April amounted to $2,631,416 compared with $2,945,436 in March. Gross earnings of the company in April totalled $34,945,079 against $34,506,550 the previous month. Working expenses were $32,313,663 as compared with $31,561,114 in March.

Western Region Summer Services.—In an editorial article in our May 11 issue it was stated that on Saturdays the main portion of the down "Cornish Riviera Express" which has no publicly advertised stop between Paddington and Truro is actually booked to stop at Newton Abbot for pilot assistance and at Devonport to change engines. We understand, however, that the practice in the height of the season now is to detach the London engine at Newton Abbot, and to double-head the train throughout from there to Truro with two fresh engines, though the stop is still made at Devonport to change crews and recharge the water tanks of the restaurant car. We are also informed that the custom of running a through restaurant car to Barmouth on the 9 a.m. from Paddington on Saturdays originated in 1950, and that the through coaches between Paddington and Stratford-on-Avon by the 9.10 a.m. down and the 4.50 p.m. from Birmingham ("Inter-City") have been running throughout the winter, though those leaving Paddington at 4.10 p.m., and returning on the train due in London at 12.25 p.m., are, as stated, a new facility.

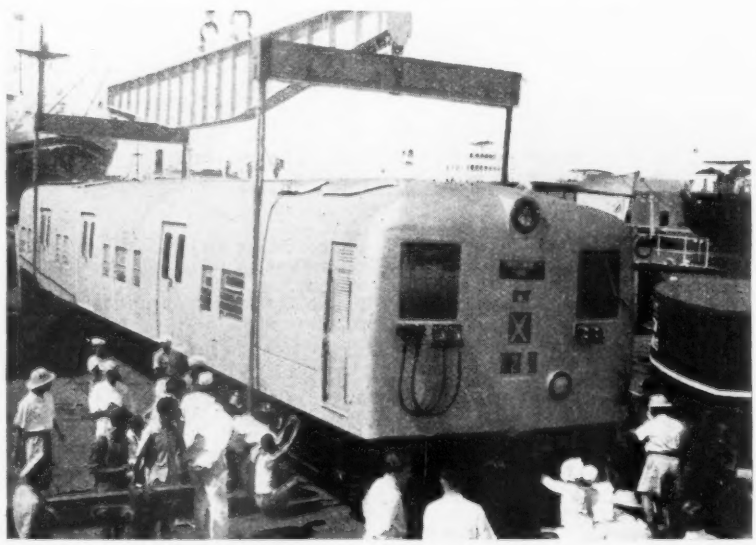
Institution of Civil Engineers: Conversazione.—The annual conversazione of the Institution of Civil Engineers will be held today (Friday) from 8 p.m. to 11 p.m. There will be an exhibition of engineering models and scientific apparatus. Members of overseas Institutions attending the Joint Engineering Conference have been invited.

Lorry Drivers Resume Work.—Last weekend the 13,000 drivers employed by the Road Haulage Executive who began an unofficial strike on May 28 returned to work. The strike began as a protest against the proposed extension of the road patrol system. There are to be further discussions between the Executive and the union.

British Plastics Exhibition.—Sir Hartley Shawcross, President of the Board of Trade, opened the British Plastics Exhibition at Olympia on Wednesday. The exhibition is the first in which all sections of the industry are taking part, and concurrently with it until June 16 a convention is being held covering progress in materials, developments of plant and fabrication techniques, and applications of plastics in the transport, building, packaging, and other industries. Since 1945 exports of plastics materials from Britain have increased eightfold and now stand at the annual rate of 35,000 tons.

Monochrome-Van der Horst Agreement.—An agreement has been reached between the Birmingham Small Arms Co. Ltd. on behalf of its subsidiary, Monochrome Limited, and the Van der Horst Company, Holland. In announcing this at a luncheon he'd at the Dorchester Hotel, London, on

British Modern Lightweight Coaches for India



The first of 28 *new motor coaches for India, built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd., arriving at Bombay* (*see article on page* 642)

OFFICIAL NOTICES

His Majesty's Colonial Service, Jamaica

VACANCIES have occurred in the Jamaica Government Railway for:—(1) A Civil Engineer; (2) a Mechanical Engineer. Appointment will be on probation for permanent and pensionable employment in the scale £945 to £1,045 per annum. Free passages are provided on appointment, and leave passages are granted to the officer (but not to his family) after each tour of 3 years. Free quarters are not provided, the rent for unfurnished accommodation varying between about £15 and £25 per month. Candidates for (1) must be A.M.I.C.E. or possess a degree in civil engineering. They must have had practical experience in railway civil engineering or have been in charge of railway construction work and surveys and the permanent way, etc., including construction and maintenance of bridges. Candidates for (2) must be A.M.I.Mech.E. or A.M.I.Loco.E., have served in locomotive workshops, and possess a good knowledge of the design and construction of modern steam and diesel locomotives. For a form of application write, giving brief particulars of age, qualifications and experience, to the DIRECTOR OF RECRUITMENT (COLONIAL SERVICE), COLONIAL OFFICE, Sanctuary Buildings, Great Smith Street, London, S.W.1. Please mention this paper and quote No. 27322/211 (Civil Engineer) or 27333/39 (Mechanical Engineer).

MECHANICAL ENGINEER, M.I.Loco.E., 19 years experience British railways, Latin America, steam and diesel traction, speaks Spanish and French, available for technical and/or executive position in any country.—Apply Box 95, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

APPLICATIONS are invited for the appointment of Transport Manager to Newton Chambers & Co. Ltd., Thorncliffe, near Sheffield. The scope of the position includes road and rail transport, locomotive, lorry, and car operation and maintenance; works rail and other internal transport, shipping and port arrangements, Railway and Clearing House negotiations, road transport negotiations; committee work and management of staff and operatives amounting to about 200 persons. A house would be available, and a car provided under the company's special terms. The position is a permanent and superannuable one. Applications should be addressed in confidence to the Personnel Officer at the above address and should give details of age, experience, and present salary.

Government of Pakistan

APPLICATIONS are invited for the following Class I senior scale posts in the Pakistan Railway Service of Engineers:—*(a)* Two Signal Engineers (District/Divisional). Candidates must be Members or Associate Members of the Institution of Railway Signal Engineers, London, and must have served a full apprenticeship and held a responsible post in the Signal Engineering Dept. of a railway in U.K., India or Pakistan, or in a firm of signalling contractors in U.K.; also they must be fully qualified in both mechanical and electric power signalling. *(b)* Two Electrical Engineers (District/Divisional). Candidates must be University graduates or equivalent in electrical engineering, fully experienced in the operation and maintenance, etc., of a railway electric power house and in the organisation and management thereof, including up-to-date systems of scheduled repairs and servicing, and have held a senior supervisory post for at least five years; experience in trainlighting an advantage. For all above posts: appointment on contract for 3 years, pay up to Rs. 1,150 per month according to qualifications and experience, plus Rs. 50 p.m. technical pay (Pakistan rupee equals approximately 2s. 2d.), plus overseas pay £30 p.m. for candidates of non-Asiatic domicile, who will also receive free passage out and back. Age not exceeding 50 years. Application, on the form to be obtained on request, should be made to the HIGH COMMISSIONER FOR PAKISTAN, 35, Lowndes Square, London, S.W.1. Closing date for the receipt of completed applications—June 25, 1951.

PERUVIAN CORPORATION LIMITED.—Required for British-owned Railways in South America, Accountants, aged 25-30. Knowledge of railway accountancy and of Spanish advantageous; experience of staff management an advantage; three years' contract, renewable, liberal leave, passage paid. Salary up to £1,000 per annum.—Apply to the Secretary, PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

THE High Commissioner for Pakistan invites tenders for the supply of Wooden Sleepers. Forms of tender, which are returnable by July 17, 1951, in Karachi, may be obtained from the Commercial Secretary, Supply and Stores Department, 40, Lowndes Square, London, S.W.1, between the hours of 10 a.m. and 4 p.m. Mondays to Fridays, on payment of a fee of £5 (not returnable) per tender. The reference SS.6646/PAJ should be quoted on all applications for tender forms.

Crown Agents for the Colonies

ASSISTANT ACCOUNTANT required by the Government of Malaya for the Railway Department for one tour of three years with prospect of permanency. Salary, including expatriation pay, is payable in local currency equivalent at the present Government rate of exchange to £714 a year rising to £1,078 a year. Cost-of-living allowance equivalent to between £336 and £616 a year according to salary and dependants. A well experienced candidate can expect a commencing salary, including expatriation pay, up to £994 a year. Free passages. Liberal leave on full salary. Candidates between 25 and 35 years should have had good training and practical experience as accountants. Must be familiar with preparation of revenue and expenditure accounts and returns, preparation and use of statistics. Should have knowledge of mechanical accounting systems, control and stock recording of stores costing as applied to mechanical engineering workshops. Candidates with railway accounting experience preferred. Apply at once by letter, stating age, full names in block letters, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M.23277/E on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

WE buy used or unserviceable Steel Files at good prices, in lots of 2 cwts. or more.—THOS. W. WARD LIMITED, T.S. Dept., Albion Works, Sheffield.

JUNIOR Traffic Officials with railway traffic apprenticeship experience. Age about 25, single, required for service on railways in Peru and Bolivia. Apply to the Secretary of THE PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

THE PERUVIAN CORPORATION LIMITED.—Assistant to Chief of Traction, Peruvian Railways: age 26/35. Qualifications: Apprenticeship with steam locomotive builders or main-line railway workshops, main experience with a locomotive running department. Knowledge of diesel power an asset. Higher National Certificate for Mechanical Engineering or graduate of Institute of Mechanical Engineers. A knowledge of Spanish an advantage. Apply to the Secretary of the PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

June 4, Mr. H. C. Hall, Managing Director & General Manager, Monochrome Limited, said that under the agreement each company will be able to use either of its two proprietary processes of hard-chrome plating cylinder liners. For the time being the larger components would be sent to Holland, Mr. J. M. A. Van der Horst said that the combined uses of the resources of both organisations would benefit diesel engine users and manufacturers.

Turbine Locomotive No. 46202.—Built in 1935 by the former L.M.S.R., locomotive No. 46202, which was experimentally fitted with a Lysholm-Smith Ljungstrom turbine, is to be converted to the normal reciprocating type. The locomotive has now run nearly 440,000 miles since construction, and it is considered that sufficient knowledge of the capabilities of this method of propulsion have been obtained over the years the locomotive has been in service.

East Indian Railway Dinner.—The 48th annual dinner of the East Indian Railway Officers' Association will take place at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2, on Wednesday, September 26. Full details may be obtained later from the Honorary Secretary, Mr. E. H. N. Lowther, The Little Gables, Folders Lane, Burgess Hill, Sussex. The annual tea-party will take place on the following day at the St. Ermin's Hotel, Caxton Street, S.W.1, and those interested should contact the Honorary Secretary, Mrs. Cambridge, 8, Golders Rise, Hendon, N.W.4.

Road Passenger Transport Services.—The number of passenger journeys on all buses and coaches owned by operators of more than five vehicles, except the London Transport Executive, was 9,924 million for the last financial year, as compared with 9,400 million in 1948-49, an increase of 5.6 per cent. The vehicle mileage rose by 7·4 per cent. from 1,591 million miles in 1948-49 to 1,708 million in 1949-50. Total net receipts, however, decreased by 13·3 per cent. as compared with the previous year. The total number of vehicles owned by these operators increased by 8½ per cent. during the year. These figures are given in the summary of annual reports of the Licensing Authorities for Public Service Vehicles for the traffic areas in Great Britain, recently published by H.M. Stationery Office at 2s.

Scottish Society of Students of the Locomotive.—Mr. William Robertson was in the chair at a meeting of the Scottish Society of Students of the Locomotive held in Glasgow on May 4, when Mr. Mon-

Western Region Fire Drill Contest

Mr. K. W. C. Grand, Chief Regional Officer, Western Region, presenting the shield to the Reading Signal & Telegraph Department team, winners of the Western Region trailer pump drill contest

tague Smith read a paper entitled "Passenger Locomotives of the Caledonian Railway, 1895-1922." The author described the development, construction and road performance of the locomotives and of special interest among the numerous photographs, line drawings and original Caledonian Railway blueprints illustrating the paper, were those showing a projected inside cylinder 4-4-2 tender engine of 1905 and a four-cylinder Pacific of 1913.

Sunday Opening of Glasgow Stations.—Glasgow St. Enoch and Glasgow Buchanan Street Stations are now open on Sundays. During the winter and spring months on Sundays trains for Dumfries, the Ayrshire coast, and the Midlands, which on weekdays leave from St. Enoch, have been starting out of Central Station, while all north services, *i.e.*, Stirling, Perth, Inverness, Dundee, and Aberdeen trains, have been leaving from Queen Street instead of Buchanan Street.

B.E.A. June Services Cut.—British European Airways announced on May 31 that some of its June services would be cut because of a hold-up in the delivery of new aircraft. June is one of the busiest months and most services affected would be fully booked. B.E.A. will still be flying substantially more services than in June last year, however, and the delivery of six new aircraft should make the full July programme possible. The services affected include London to Amsterdam, Oslo, and Paris, and internal German and Scottish services.

British Railways Summer Train Services Curtailment.—The Railway Executive announces that in order to clear up outstanding freight traffic before the summer it will be necessary to shorten the duration of the 1951 summer passenger services. The accumulation of this traffic has been caused by the exceptionally heavy volume during the past six months, which shows every sign of continuing, and the severe shortages of operating staff in the industrial areas. Summer services will, therefore, begin on July 2 instead of June 18, and will end on September 9 instead of September 23, a total curtailment of four weeks. Every endeavour will be made to transfer passenger reservations already made to other services where necessary.

Forthcoming Meetings

June 13 (*Wed.*) to 15 (*Fri.*).—Institute of Transport Congress at Torquay. Party assembles on June 12.

June 13 (*Wed.*).—Permanent Way Institution, Manchester & Liverpool Section, visit to James Mills Limited, Bredbury, at 7 p.m.

Until June 15 (*Fri.*).—Joint Engineering Conference at the Institution of Civil Engineers, Institution of Mechanical Engineers, and Institution of Electrical Engineers.

June 16 (*Sat.*).—Railway Correspondence & Travel Society, Nottingham Area tour, starting from Nottingham Victoria at 2 p.m.

June 20 (*Wed.*).—Permanent Way Institution, Manchester & Liverpool Section, visit to James Mills Limited, Bredbury, at 7 p.m.

June 22 (*Fri.*).—British Standards Institution, Golden Jubilee, Conversazione at the Natural History Museum, South Kensington, London. Reception at 7.30 p.m.

Railway Stock Market

Markets have been more cheerful and generally active, helped by hopes of a better turn in the Persian oil situation and by revived rumours of a possible cease-fire move in Korea. Moreover, a strong rally in British Funds also benefited sentiment, British Funds have been in better demand ever since the European Committee of the International Monetary Fund suggested that revaluation of currencies would be a safeguard against inflation dangers. It is generally believed that there is little prospect of any early upward revaluation of the £, because the general effect of this would be to increase prices of our goods overseas and might lead to a big reaction in our dollar earnings. Nevertheless recent events have tended to emphasise the strength of sterling in world markets; and the rally in British Funds has been due in part to foreign buying of 3½ per cent. War Loan which has recovered well to 88½ at the time of going to press.

Foreign rails reflected the more buoyant and active conditions in markets. Best feature was again buying of Antofagasta stocks, helped by the good trend in traffics. The preference stock strengthened further to 59½, buyers being attracted by the good yield, while the ordinary stock was more active around 9. Manila stocks were favoured again on the view that they appear to be moderately priced, assuming there is a reasonable settlement in respect of the holdings of bonds in the railroad company. Manila "A" bearer debentures were up to 76, the "B" to 69, while the preference shares were better at 8s. and business around 1s. 6d. was recorded in the ordinary shares. On the other hand, United of Havana stocks remained quieter in the absence of further news of nationalisation moves in Cuba. The 1906 debentures moreover attracted a fair business around 18½.

There was again rather more business in Brazilian rail stocks, sentiment being helped by the view that, bearing in mind Brazil's improved holding of sterling, there seems no reason why final settlements of pay-out distributions should be much further delayed. Leopoldina ordinary was 10½, the preference stock 26¾, the 4 per cent. debentures 93½ and the 6½ per cent. debentures 140½. Leopoldina Terminal 5 per cent debentures were 93 and the ordinary units 1s. 3d. San Paulo 10s. units have been more active around 10, and Brazil Rail bonds were 4⅛.

In other directions, Bolivar "C" debentures kept at 58 and La Guaira ordinary stock was 85. Nitrate Rails were 22s. 6d. and Taltal eased to 17s. 9d. Mexican issues continued to ease, with Mexican Central "A" bonds at 60¼. Costa Rica 6½ per cent debentures marked 53½, Dorada stock 66, and Paraguay Central 6 per cent. debentures 29. Canadian Pacifics have been active with dollar stocks, and changed hands up to 53. Moreover, yield considerations brought in buyers for the 4 per cent. preference and debentures at around 71½ and 93 respectively. White Pass Yukon income debentures have remained around 87, awaiting the long-talked-of scheme.

Sentiment in regard to road transport shares was affected by the further dividend reductions that have been announced. The reductions, however, are generally moderate and moreover, the balance-sheet positions remain strong and emphasise the investment merits of the shares as a long-term holding. It is true that costs are continuing to rise, making higher fares inevitable; but the view in the City is that the downtrend in earnings will probably be checked this year. West Riding were 52s., Lancashire Transport 61s. 3d. and Southdown 102s. 6d. Maidstone & District were quoted around 71s. after publication of the results and reduction in the dividend from 25 per cent to 20 per cent.

Fears of higher steel prices tended to influence engineering and kindred shares, although good features were not lacking. Guest Keen rose further to 61s., and T. W. Ward at 76s. 6d. again reflected market talk of higher dividend prospects. On the other hand, both Cammell Laird and Vickers have eased off now it seems there is unlikely to be any early decision on how English Steel nationalisation compensation is to be dealt with.

Shares of locomotive builders and engineers remained firm although Hurst Nelson eased to 59s. 6d. at Glasgow. Birmingham Carriage were 39s. 3d., Beyer Peacock 34s. 7½d., Vulcan Foundry 31s. 9d., North British Locomotive 20s. 1½d., Gloucester Wagon 17s. and Wagon Repairs 5s. shares 16s. Charles Roberts kept steady at 101s.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1949/50	No. of week	Aggregate traffics to date: Total 1950/51	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Cen. America	Antofagasta ...	811	25.5.51	98,610	+ 47,300	21	2,256,300	+ 958,090
	Costa Rica ...	281	Apr., 1951	c773,399	– c79,560	43	c9,611,880	+ c1,162,459
	Dorada	70	Apr., 1951	33,926	– 5,369	17	142,034	– 23,732
	Inter. Ctl. Amer....	794	Mar., 1951	$1,204,306	– $106,082	13	$3,753,109	– $25,546
	Paraguay Cent. ...	274	18.5.51	£203,811	+ £27,436	46	£9,518,102	+ £2,690,930
	Peru Corp. ...	1,050	Apr., 1951	$7,726,000	+ $3,463,000	43	$76,397,000	+ $18,736,942
	,, (Bolivian Section)	66	Apr., 1951	Bs. 16,036,000	+ Bs. 5,871,500	43	Bs. 126,503,000	+ Bs. 28,991,336
	Salvador	100	Mar., 1951	c236,000	+ c60,000	39	c1,563,000	+ c87,000
	Taltal	154	Mar., 1951	$2,091,357	+ $308,104	39	$14,688,148	+ $2,461,284
Canada	Canadian National†	23,473	Apr., 1951	16,818,000	+ 2,159,000	17	64,458,000	+ 10,909,000
	Canadian Pacific† ...	17,037	Apr., 1951	11,648,000	+ 1,721,000	17	44,384,000	+ 6,731,000
Various	Barsi Light* ...	167	Apr., 1951	50,227	+ 16,440	4	50,227	+ 16,440
	Egyptian Delta ...	607	10.4.51	17,513	– 267	4	17,513	– 267
	Gold Coast ...	536	Mar., 1951	288,386	+ 29,182	52	3,141,271	+ 333,187
	Mid. of W. Australia	277	Mar., 1951	41,113	+ 7,335	39	357,497	+ 81,623
	South Africa ...	13,347	5.5.51	1,855,215	+ 281,320	5	9,436,164	+ 1,806,876
	Victoria	4,744	Jan., 1951	1,990,981	– 9,278	31	—	—

* Receipts are calculated at 1s. 6d. to the rupee

† Calculated at $3 to £1